SECTION 3.5
CULTURAL RESOURCES

3.5 CULTURAL RESOURCES

This section identifies potential cultural resources impacts that could result from the proposed project. Cultural resources include historical and archaeological resources. This section is based on a cultural resources report prepared by Holman & Associates (2007).

3.5.1 CULTURAL RESOURCES ENVIRONMENTAL SETTING

METHODOLOGY

Cultural resources impacts were evaluated through a literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information System located in Rohnert Park (NWIC file no. 07-473). The objectives of this record search were to assemble an inventory of known historic (since arrival of Europeans to California in the late 18th century) and prehistoric archaeological resource locations in and around the proposed Water Trail (WT) improvement areas and to identify those areas that might contain unrecorded archaeological resources. Maps on file at the NWIC were inspected along with a map depicting prehistoric shellmounds developed by N.C. Nelson at the beginning of the 20th century (Holman Associates, 2007).

Using digital maps of the project area, WT study locations were transferred to U.S.G.S. 7.5' topographic quadrangle series as closely as possible. This format is in use by the NWIC for plotting archaeological resources and the study areas for development projects. Due to the scale of the digital project maps, specific study locations encompass an area of approximately three-tenths of a mile diameter (or about a city block), which is relatively large. Consequently, resolution was limited and proximity of study locations to mapped archaeological sites was difficult to discern.

Archaeological sites situated within the approximate boundaries circumscribed by the WT study locations were listed. These included sites recorded with primary numbers and trinomials (both systems are in use at the NWIC) or in other less verifiable formats. As a result, archaeological sites identified within the WT study locations could include prehistoric, historic, or built environment (structures), though most are clearly prehistoric. The prehistoric sites recorded by N.C. Nelson in the early 1900s were designated by their "N" designation whenever they appeared on the NWIC base maps.

OVERVIEW OF CULTURAL RESOURCES

Archaeological research has documented continuous occupation and/or use of the Bay margin beginning as much as six thousand years ago, building in intensity over the past three thousand years, ending with the arrival of the Spanish in the late 18th century. The earliest occupation sites of the Native Americans, dating back as much as 9,000 years before the present, were clustered around the banks of the rivers which drained into what is now San Francisco Bay. Rising water levels have flooded these site locations under many feet of water. Several locations in the Bay counties have yielded archaeological materials dating back 6,000 years that are right at or above the current Bay shoreline.

The earliest occupation layers at these sites were created by Native Americans who had immigrated into the Bay Area from the Great Basin east of the Sierras. These people were big game hunters with little experience in collecting the principal food source (shellfish)

found along the Bay margin. Within a very short time period these new arrivals learned when it was safe to eat shellfish, the remains of which began to appear in visible quantities at their villages and smaller procurement sites.

Over the past two to three thousand years, this enhanced food resource base and an increase in immigration from outside the Bay Area led to a huge population jump in the Bay counties along the Bay margin: villages comprised of cultural soils (midden) containing large amounts of shellfish were up to 40 feet high, covering several acres in locations in Alameda and Contra Costa Counties. Population concentrations grew so dense that Native American villages containing shellfish remains and other foods taken from the Bay margins were established at locations several miles from the actual food collection areas. The archaeological record suggests that population density was still on the rise at the time of the arrival of the Spanish in the late 18th century. By 1805, there were no Native peoples practicing their former food gathering activities anywhere near San Francisco Bay.

CULTURAL RESOURCES IN THE WATER TRAIL AREAS

As described in Table 3.5-1, based on the literature review, 37 WT sites were identified as potentially containing or overlapping with recorded archaeological sites and 75 others did not show any archaeological sites present. Of the 73 WT site locations for which the literature search showed no sites present, 33 had been subject to a cultural resources investigation and 40 had not. In all, of the 112 WT locations studied, 57 WT locations had not been subject to previous cultural resources studies. It must be noted however, that 15 of these locations had recorded archaeological sites, recorded informally or by academic institutions before CEQA regulations required such studies.

The high number of WT sites that contain or are near recorded archaeological sites should be considered a reliable gauge of the likelihood that additional archaeological sites would be found if formal surveys were undertaken. When N.C. Nelson undertook his survey of the Bay margins at the beginning of the 20th century, he focused on the larger and most easily accessible of the shell mounds. His research strategy at the time clearly did not compel him to complete a thorough search of the Bay margins and adjacent lands for signs of occupation.

Subsequent formal archaeological studies driven by CEQA and the National Historic Preservation Act has led to the discovery of numerous additional shell mounds in Bay margin settings as development has opened up formerly restricted areas for research. Actual development activities have led to the discovery of numerous additional archaeological deposits, buried under fill and buildings (in particular, the World War II ship building locations) which took advantage of the Bay shoreline beginning in the mid 20th century and extending up to the present.

In summary, the original premise that Native American villages were located in restricted locations at the beginning of the 20th century has changed to an understanding that seasonal villages and procurement sites have been found and will be found at almost any location along the Bay shoreline. Population densities in late prehistoric times were such that very little of the shoreline was not utilized for living or food procurement over the past 2000 years.

TABLE 3.5-1: WT SITES AND ARCHAEOLOGICAL SITES

ID	Quad	Sites	Surveys	Nelson	Comments
A1	Richmond	Yes	No		
A2	Oakland West	No	No		
A4	Oakland West	No	Yes		
A5	Oakland West	Yes	Yes		
A6	Oakland West	No	No		
A8	Oakland West	No	Yes		
A9	Oakland West	No	Yes		
A11	Oakland West	No	Yes		
A12	Oakland West	No	No		Adjacent to border of Oakland East
A14	Oakland West	No	No		
A15	Oakland West	No	No		
A18	San Leandro	Yes	Yes		East side of channel has survey, no site
A20	San Leandro	No	Yes		
A22	Redwood Point	Yes	No		
A24	Newark	No	No		
A25	Oakland East	No	No		
A26	Oakland West	No	No		
A27	Redwood Point	No	No		
A28	San Leandro	No	Yes		N322 & N323 ½ mile to NE
A30	San Leandro	No	Yes		
CC1	Benicia	No	No		
CC2	Benicia	No	No		
CC5	Mare Island	Yes	No		
CC6	Mare Island	No	No		
CC8	San Quentin	Yes	Yes		

TABLE 3.5-1: WT SITES AND ARCHAEOLOGICAL SITES

ID	Quad	Sites	Surveys	Nelson	Comments
CC9	San Quentin	No	No		
CC10	San Quentin	Yes	No	N286, N287	
CC11	Richmond	No	No		
CC14	Richmond	No	Yes		
CC15	Richmond	Yes	Yes		
CC16	Richmond	No	Yes		
CC17	Richmond	No	Yes		
CC19	Richmond	Yes	Yes	N301, N302	
CC20	Richmond	Yes	Yes		
CC21	Mare Island	No	Yes		
CC22	Honker Bay	No	Yes		
CC23	Mare Island	No	No	N258	
M1	San Francisco North	No	No		
M2	San Francisco North	No	No		
M3	San Francisco North	Yes	No		
M4	San Francisco North	Yes	No		
M5	San Francisco North	No	No		
M6	San Francisco North	No	Yes		
M8	San Francisco North	Yes	No		
M10	San Rafael	No	No		
M11	San Rafael	No	No		
M13	San Rafael	No	No		Near edge for San Quentin
M16	San Quentin	Yes	Yes	N31	
M17	San Francisco North	Yes	Yes	N42	
M19	San Francisco North	No	No		
M25	San Rafael	No	Yes		
M27	San Rafael	Yes	No	N312	

TABLE 3.5-1: WT SITES AND ARCHAEOLOGICAL SITES

ID	Quad	Sites	Surveys	Nelson	Comments
M28	San Rafael	No	No		
M29	San Quentin	No	Yes		Adjacent to border of San Rafael
M30	San Quentin	No	Yes		
M31	San Quentin	No	Yes		
M33	San Rafael	No	Yes		
M35	San Quentin	Yes	Yes	N91, N317?	
M36	San Quentin	Yes	Yes	N95	
M38	San Quentin	Yes	Yes	N109	
M39	Petaluma Point	Yes	Yes		
M40	Petaluma Point	Yes	Yes		
M41	Novato	No	Yes		
M43	Novato	Yes	Yes		
M47	Novato	Yes	No	N187, N321?	
N1	Cuttings Wharf	No	Yes		
N2	Napa	Yes	Yes		Sites NSD-3, 4
N6	Cuttings Wharf	No	No		
N7	Cuttings Wharf	Yes	No	N230	
N8	Napa	No	No		
SC2	Milpitas	Yes	Yes		
SC3	Mountain View	No	Yes		
SF1	San Francisco South	No	Yes		
SF2	Hunters Point	Yes	No		
SF4	San Francisco South	No	Yes		
SF6	San Francisco North	No	Yes		
SF7	San Francisco North	No	Yes		
SF8	San Francisco North	No	Yes		
SF9	Oakland West	Yes	Yes		

TABLE 3.5-1: WT SITES AND ARCHAEOLOGICAL SITES

ID	Quad	Sites	Surveys	Nelson	Comments
SF10	San Francisco North	Yes	Yes		
SF11	San Francisco North	Yes	Yes		
SF12	San Francisco North	Yes	Yes		
SF13	San Francisco North	No	Yes		
SF14	San Francisco North	No	No		
SM2	Palo Alto	No	No		Assumed to be Palo Alto based on landform Redwood Pt., Newark, Mtn View
SM4	Redwood Point	No	No		
SM6	Palo Alto	No	No		
SM9	San Mateo	No	Yes		
SM11	San Mateo	No	No		
SM12	San Mateo	No	No		
SM13	San Mateo	No	Yes		
SM16	San Mateo	No	No		
SM17	San Mateo	Yes	No	N?	
SM18	San Mateo	Yes	Yes		
SM20	San Francisco South	No	No		
SM21	San Francisco South	No	No		
SM22	San Francisco South	No	No		
SM23	San Mateo	Yes	No		
SM24	Redwood Point	No	Yes		
SM25	Redwood Point	No	No		
SN3	Cuttings Wharf	No	No		Adjacent to border of Sears Point
SN5	Petaluma River	Yes	No		
SN6	Petaluma River	No	No		
SN7	Petaluma	No	No		
SO1	Mare Island	No	No		

TABLE 3.5-1: WT SITES AND ARCHAEOLOGICAL SITES

ID	Quad	Sites	Surveys	Nelson	Comments
SO2	Benicia	Yes	No		P-81 probably historic bldg
SO5	Denverton	No	Yes		
SO7	Benicia	No	No		
SO8	Benicia	No	No		
SO9	Benicia	Yes	Yes		
SO10	Benicia	No	Yes		
SO12	Fairfield South	No	No		

3.5.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Improvements associated with the development of the WT could cause direct and indirect impacts to both historic and prehistoric cultural resources. Of these two categories, impacts could occur with greater frequency to prehistoric sites, which are recorded and/or are anticipated to be found all along the San Francisco Bay margin. Impacts would be considered significant if they:

- Cause a substantial adverse change in the significance of, or loss of, a historic resource.
- Cause a substantial adverse change in the significance of, or loss of, an archaeological resource.
- Disturb any human remains.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Disturbance to Prehistoric Archaeological Deposits during Improvements to Bay Access and/or Development of Infrastructure

The WT could impact known or suspected prehistoric archaeological deposits directly through improvements to Bay access and/or development of infrastructure (roads, trails, buildings).

Improvement of access to points along the Bay margin also could result in an increase in boat landing and pedestrian traffic to these areas. Casual damage to, and removal of, identifiable historic resources and archaeological deposits also could result from WT users accessing various Bayshore areas. Artifacts that could be damaged or removed from these locations may include human bone (almost all of the Bay margin shell middens are also cemeteries) as well as other cultural materials.

These direct and indirect effects could result in **potentially significant but mitigable** impacts to individual sites as well as potentially significant cumulative impacts to Bay-shore cultural resources.

Mitigation Measure 3.5-1a: Undertake expanded archival research and field investigations to provide information about potential prehistoric archaeological deposits

As part of the CEQA review of Trailhead Plans, expanded archival research and/or field inspections shall be undertaken for all those WT locations where project related earthmoving or excavation is planned, whether or not previous archaeological sites have been recorded in the immediate area. As noted above, 19th and 20th century alterations of the Bay margins have buried or obscured prehistoric sites in numerous locations. Archaeological sites could exist directly underneath existing buildings, pavement and historic fill materials.

In those areas where archaeological sites have been recorded at or in close proximity to the proposed WT facilities, during the CEQA review of Trailhead Plans that would involve excavation, an archaeologist shall determine if it is necessary to conduct limited programs of mechanical subsurface presence/absence testing to search for deposits which may be damaged by actual earthmoving activities. If deemed necessary by an archaeologist as part of the CEQA review of Trailhead Plans, mapping of the spatial extent of the archaeological deposits found during field inspections or mechanical subsurface testing shall be done in advance of final construction designs so that preservation of the deposits can be achieved through avoidance of impacts.

Mitigation Measure 3.5-1b: Protect prehistoric archaeological remains in adjacent areas

In those areas where archaeological sites have been recorded at, or in close proximity to, the proposed WT facilities, and CEQA review of Trailhead Plans indicates a potential for damage to the site from trailhead use or improvements, Trailhead Plans shall avoid disturbance to theses sites, and, if deemed necessary and appropriate per the CEQA review, these sites and resources shall be protected by covering with fill and/or landscaping or parking lots, or by fencing. Signage shall be provided to advise boaters to respect and avoid historic resources.

CUMULATIVE IMPACTS

Potential impacts to cultural resources and corresponding mitigation measures are site-specific and present no cumulative impacts.

SECTION 3.6
HAZARDOUS MATERIALS

3.6 HAZARDOUS MATERIALS

This section of the DEIR identifies potential hazards/hazardous materials impacts that could result from the proposed project. In general these relate to excavations that might contact contaminated soil or groundwater and use of hazardous materials at the site during development or ongoing maintenance. Other issues associated with hazards and hazardous materials were focused out from further review by the Initial Study.

3.6.1 HAZARDOUS MATERIALS SETTING

OVERVIEW OF HAZARDOUS MATERIALS

The Backbone Sites, as well as any future sites that may be designated under the WT Plan, include those that are located in industrial areas. Some of these could have contaminated soil and/or groundwater that has resulted from past or current land uses on, or near, the site. Because the sites are adjacent to the Bay (and groundwater tends to flow downhill towards the Bay) potential WT sites may be downgradient from sources of groundwater contamination. Potential sources of groundwater contamination include leaks from underground fuel tanks, notably the more water-soluble (and carcinogenic) components of gasoline such BTEX (benzene, toluene, ethylbenzene and xylene), and the gasoline additive MTBE (methyl tert-butyl ether).

3.2.2 REGULATORY SETTING

Contaminated sites and known sources of contamination are documented in the Hazardous Waste and Substance Sites List (also known as the "Cortese list") created pursuant to California Government Code section 65962.5 and kept by most local planning departments. The list contains a list of known or potentially contaminated sites provided to the California Environmental Protection Agency (CalEPA) by the California Department of Toxic Substances Control (DTSC), Department of Health Services, California State Water Resources Control Board (SWRCB), and the Integrated Waste Management Board. DTSC also maintains a list of properties with land use restrictions entered into with DTSC. The Cortese list includes:

1. List of Hazardous Waste Substances sites from Department of Toxic Substances Control (DTSC) Envirostor database (http://www.envirostor.dtsc.ca.gov/public/). The database produces a spreadsheet sortable by city with most sites also located on a map. The list includes: Federal Superfund sites (National Priorities List (NPL)), and State Response (including military facilities and State Superfund). (The Envirostor database also includes Voluntary Cleanup and School sites that are not part of the "Cortese list.")
2. List of Leaking Underground Storage Tank Sites by County and Fiscal Year from Water Board Geotracker database. (There are a very large number of these and many of them are in locations near the Bay margins. They can also be seen on Envirostor map if selected.)
3. List of solid waste disposal sites identified by Water Board with waste constituents above hazardous waste levels outside the waste management unit. (There are only three sites in nine Bay Area counties and none is near a proposed WT site.)

4. List of "active" Cease and Desist (CDO) and Cleanup and Abatement Order (CAO) cases from Water Board. (This is a spreadsheet containing, as of December 2007, 644 sites in nine Bay Area counties.)
5. List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC. (There are only two in California in total and neither is adjacent to a proposed WT site.)

The lists represent data collected by different agencies and also sites that present different degrees of concern as regards their potential to cause harm to humans and wildlife if disturbed and contaminants released.

A Phase I Environmental Site Assessment (ESA) may be required if there is any suspicion of former uses of toxic substances on the site or if there is a change in use of the property and discretionary land permit granted. The Phase I ESA would include a site history to assess if past uses are likely to have contaminated the land, an on-site survey to see if there are any physical traces of contamination, and a literature search. The literature search would generally include a review of the lists mentioned above to assess whether the site or adjacent properties had been involved in chemical releases, whether or not it had undergone, or was undergoing cleanup, and the agency that was overseeing the cleanup. If the Phase I indicates the likelihood of contamination, a Phase II ESA may be recommended and would typically include sampling and analysis.

3.2.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Impacts would be considered significant if the project:

- Is located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5; and, as a result, would create a significant hazard to the public or the environment.

As noted in the introduction to this section, the project was determined in the Initial Study to not have any potentially significant impacts associated with other hazardous materials standards of significance in the Initial Study checklist.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Exposure of Workers to, or Release of, Contaminated Soil Or Groundwater from Soil Excavation

The 57 High Opportunity Sites (HOS) would require minimal development (i.e., signage), and therefore would not necessitate excavation that could expose workers to hazardous materials in the soil or groundwater.

Development of the remaining 55 Backbone Sites may disturb soil or groundwater that could be contaminated due to past site uses, which could expose workers or nearby public to health hazards associated with these contaminants. In addition, dewatering of contaminated groundwater during construction could result in contaminated groundwater being discharged to the Bay or other nearby waterways.

Potential hazardous materials impacts of construction work at a WT site would depend on: a) depth and extent of grading at the site; b) site characteristics

(topography, nature of underlying rock/sediment), and c) past and current surrounding land uses (i.e., uses that may have contaminated soils and groundwater).

This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.6-1: Conduct a Phase I Environmental Site Assessment prior to project approval

If excavation is proposed at a WT site, a Phase I Environmental Site Assessment shall be conducted as part of the CEQA review of the Trailhead Plan. The WT site location shall be compared with lists of hazardous materials sites that are compiled under the so-called "Cortese list." If the Phase I ESA reveals that uses of the site or adjacent sites have involved use or release of hazardous chemicals, a Phase II involving sampling and analysis may be required. If any hazardous substances are found, the site shall either be cleaned up to recommended background levels, or capped, as part of final site improvement plans. If this is not possible the site shall not be developed and, if it is then unsuitable for WT use, will be removed from consideration.

CUMULATIVE IMPACTS

Potential impacts from hazardous materials and corresponding mitigation measures are site-specific and present no cumulative impacts.

SECTION 3.7
HYDROLOGY AND WATER QUALITY

3.7 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology and water quality conditions of the San Francisco Bay Estuary (Estuary) and potential impacts to these conditions from implementation of the WT. The existing and proposed launch and destination sites for the WT occur throughout the various embayments of the Estuary (Central San Francisco Bay, South San Francisco Bay, San Pablo Bay, and Suisun Bay). Each of these water bodies has different hydrologic and water quality characteristics that are described as a background for the impact assessment. The regulatory framework provides an overview of federal, state, and local regulations protecting the hydrology and water quality of the Estuary. Finally, potential impacts to the hydrology and water quality of the Estuary are described and mitigation measures are presented to compensate for potential impacts.

3.7.1 HYDROLOGY AND WATER QUALITY ENVIRONMENTAL SETTINGS

HYDROLOGY

The San Francisco Estuary is the largest estuary on the West Coast of the United States. The Estuary, comprised of San Francisco Bay, San Pablo Bay, Suisun Bay, and the Sacramento-San Joaquin Delta, drains over 40 percent of California including the Sierra Nevada and Central Valley. The Sacramento and San Joaquin rivers collectively contribute roughly 95 percent of the total freshwater input to the Estuary; the other five percent is provided by creeks and streams that drain directly into the Bay. Approximately 25 percent of the water that would otherwise flow through the Delta and into the Bay is instead diverted from the Delta and sent to the Central Valley and Southern California for use as irrigation and drinking water. Water that does make it through the Delta then flows through Suisun Bay, the Carquinez Strait, and San Pablo Bay before entering San Francisco Bay. From there, water either flows into the South Bay or exits the Estuary into the Pacific Ocean through the Golden Gate. The Bay Area has a Mediterranean climate with highly seasonal precipitation and runoff in the Estuary with more than 90 percent of annual runoff occurring during the October-April rainy season.

The Estuary is a “mixed-diurnal” tidal system of two high tides and two low tides of unequal magnitude each day. During each tidal cycle (approximately 24.5 hours) there is a higher-high, high, low, and lower-low tide. The heights of each high and low tide are different every day, reflecting the spring-neap tidal cycle (approximately 2 weeks tied to the moon’s cycle) and seasonal controls. This tidal exchange is a fundamental determinant of water surface levels, direction, and volume of flow and salinity and thereby exerts a fundamental influence on the biological, chemical, and physical conditions of the Estuary.

Freshwater inflows, tidal flows, and their interactions largely determine variations in the hydrology of the Estuary. Hydrology has profound effects on all the species that live in the Bay/Delta because it determines the salinity in different portions of the Estuary and controls the circulation of water through the channels and bays. Circulation patterns within the Bay are influenced by Delta inflows, gravitational currents, and tide- and wind-induced horizontal circulation. The cumulative effects on net circulation within embayments of the latter three factors tend to dominate that of freshwater inflows except

during short periods after large storm events (Smith 1987). Exchanges between individual embayments (South San Francisco Bay, Central San Francisco Bay, San Pablo Bay, and Suisun Bay) are influenced both by mixing patterns within embayments and by the magnitude of freshwater inflows (Smith 1987).

SEA LEVEL RISE

A variety of estimates quantify the range of potential sea level rise, report observed trends and offer predictions of global warming and the potential impacts (Watson 2001, CCCC 2006, IPCC 2007). The most recent report from the Intergovernmental Panel on Climate Change (IPCC 2007) contains a midrange projection of sea level rise this century of 8-17 inches (0.7-1.4 ft), with a full range of variability of 7-23 inches (0.6-1.9 ft). Note that the IPCC estimate conservatively assumes no "speculative" critical threshold changes in Greenland or Antarctic ice sheet wasting, a process that would substantially accelerate and amplify secular rise in sea level (Overpeck *et al.* 2006). Empirical estimates of sea level rise produced by other researchers project a mid-range rise this century of 28-39 inches (2.3–3.3 ft) with a full range of variability of 20-55 inches (1.7-4.6 ft), substantially higher than IPCC 2007 projections (Rahmstorf 2007). The CALFED Bay-Delta Program recommends using the higher estimates for all planning efforts in the Delta (Mount 2007). Other recent estimates by the California Climate Change Center[1] report sea level rise in California over the past century to be approximately 7 inches (0.6 ft), and project increases of 22 to 35 inches (1.8 to 2.9 ft) by 2100 (CCCC 2006). The projected increase in sea level will alter historical storm frequency predictions by decreasing recurrence intervals and increasing vulnerability of coastal regions to flooding (CCCC 2006). An increase in sea level of one foot means that storm surge-induced floods that formerly occurred on average at 100-year intervals would more likely occur at 10-year intervals (CCCC 2006). Local sea-level rise depends upon a number of physical factors including local land vertical movement (uplift/subsidence) and hydrodynamic responses.

EMBAYMENT CHARACTERISTICS

SOUTH SAN FRANCISCO BAY

South San Francisco Bay (also commonly referred to as South Bay) is geographically and hydrologically distinct from the northern reach of the Estuary. The South Bay is a tidally oscillating, lagoon-type estuary, where circulation is limited and variations are determined by water exchange between the northern reach and the ocean. The greatest tidal range in the Estuary is found in the South Bay, where the spring tidal range (mean lower low water to mean higher high water) is approximately nine feet (the spring range is approximately six feet at the Golden Gate). Direct freshwater inflows are severely limited due to the construction of dams and reservoirs in the watershed and in the summer months the dominant source of freshwater is sewage effluent from the San Jose/Santa Clara Wastewater Treatment Plant (Conomos *et al.* 1979), which is authorized to discharge up to 120 million gallons per day. The South Bay also shows the least amount of salinity stratification due to its greater isolation from freshwater sources

[1] The California Climate Change Center report is a multi-institution collaboration among the California Air Resources Board, DWR, California Energy Commission, CalEPA, and the Union of Concerned Scientists.

(Conomos *et al.* 1985). Water residence times are much longer in the South Bay than in the North Bay. During the summer months when there is little freshwater input, the residence times of water can be on the order of several months. In the winter, when density-driven exchanges occur, the residence time can be less than a month (Walters *et al.* 1985).

NORTH BAY

The northern reach of the Bay, composed of Central San Francisco Bay and San Pablo Bay, is a partially to well mixed estuary (depending on the season) that is dominated by seasonally varying river inflow primarily from the Sacramento and San Joaquin Rivers. The tidal amplitude increases somewhat in the North Bay from the Golden Gate to the eastern shores of San Pablo Bay, where it is the highest. The tides are then attenuated when passing through the Carquinez Strait so that the tidal range is diminished in Suisun Bay (Walters *et al.* 1985). A deep relict river channel running approximately 47 miles from the Golden Gate to the confluence with the Sacramento and San Joaquin Rivers enhances estuarine circulation; this relict channel is used today as a shipping lane. The salinity in the North Bay decreases somewhat relative to the Golden Gate with salinities being reduced by Delta outflow and in the winter by additional local stream and river inflows. The timing and magnitude of the highly seasonal river inflow alters the circulation of the North Bay, which is largely maintained by salinity-controlled density differences between river and ocean waters. Residence times of water in the North Bay can be only days during periods of high river discharge, or months in drier periods.

SUISUN BAY

Suisun Bay is the most complex of the embayments in the Estuary. It is a system made up of several open water areas, sloughs, and the adjacent Suisun Marsh. The Sacramento and San Joaquin Rivers enter the Estuary at the eastern end of Suisun Bay and as a result, the salinity gradient in Suisun Bay is the greatest found in the Estuary. The salinity of Suisun Bay varies greatly depending on Delta outflow, more so than in the other embayments. Tidal wave energy is dramatically reduced as it travels across Suisun Bay and through the sloughs in Suisun Marsh. The western end of Suisun Marsh is strongly influenced by the tides as they propagate into the Marsh through Grizzly Bay, while the tides in the eastern Marsh are significantly less energetic due to a strong dissipation of the tidal wave as it passes through Suisun Bay (Walters *et al.* 1985). The tides also dissipate as they propagate through the narrow, sinuous network of channels in the Marsh, leading to a general reduction in tidal forcing from south to north. The residence time in Suisun Bay is similar to that in the North Bay, varying from days during periods of high river discharge to months during drier periods.

WATER QUALITY

The primary water quality parameters of concern include salinity, dissolved oxygen (DO), pH, total suspended solids (TSS)/turbidity, and pollutants. Because the project has no, or minimal, potential to affect salinity, pH, or DO, those items are not discussed further. Suspended solids/turbidity and pollutants are addressed below.

TOTAL SUSPENDED SOLIDS AND TURBIDITY

Turbidity and total suspended solids (TSS) are generally used as measures of the quantity of suspended particles, which can comprise a mineral component (silts, clays, etc.) and a biological component (plankton). Particles can become suspended in a water body by multiple actions including direct inputs from rivers and surface runoff, wind-driven re-suspension by waves, tidal currents, mining and dredging activities, disturbance by boats or wildlife, and algae growth in the water column. Shallow areas and channels adjacent to shallow areas have the highest suspended sediment concentrations. TSS levels vary throughout the Bay depending upon season, tidal stage, and depth. Central San Francisco Bay generally has the lowest TSS concentrations; however, spatial variations in the processes influencing re-suspension can cause highly variable differences in local TSS values. San Pablo Bay and South Bay generally have higher concentrations due to their shallow depths that facilitate local resuspension by the many processes mentioned above.

The water quality goals set forth in *The San Francisco Bay Basin Water Quality Control Plan* (Basin Plan) (SFRWQCB 2007) state the suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. The goals also state that waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity related to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 Nephelometric Turbidity Units (NTU).

POLLUTANTS

Pollutant loading to San Francisco Bay has long been recognized as one of many factors that have historically stressed aquatic resources. Pollutants enter the aquatic system through atmospheric deposition, runoff from agricultural and urbanized land, and direct discharge of municipal and industrial wastewater. Common pollutants in the Bay include nutrients (especially nitrogen and phosphate), metals (such as copper and lead), and organic/inorganic chemicals from industrial and municipal sources. For the WT, the pollutants of greatest concern are petroleum products (oil and grease) that are common in runoff from impervious surfaces in developed areas. These pollutants will be found on the parking lots and roads servicing WT launch sites and can be washed into the Bay in stormwater runoff.

The Basin Plan states that Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses (SFRWQCB 2007).

The Bay's sediment can be both a source of and a sink for pollutants in the overlying water column. The overall influx of pollutants from the surrounding land and waste discharges can cause increases in sediment pollutant levels. Natural resuspension processes, biological processes, other mechanical disturbances, dredging, and sediment disposal can remobilize particulate-bound pollutants.

SEDIMENT QUALITY

Sediment quality in the Bay varies greatly according to the physical characteristics of the sediment, proximity to historical waste discharges, the physical/chemical condition of the sediment, and sediment dynamics that change with location and season. Generally the level of sediment contamination at a given location will vary depending on the rate of sediment deposition, which varies with seasons and tides. Chemical contaminant dynamics in an estuary are closely associated with the behavior of suspended and deposited sediments and estuarine circulation patterns and processes. Overall, the physical and chemical characteristics of sediments, and the bioavailability and toxicity of sediment-associated chemicals to aquatic organisms, are particularly important in determining their potential impact on environmental quality.

3.7.2 REGULATORY SETTING

Project-related activities that may impact the hydrology of the Estuary will be regulated under the McAteer-Petris Act, the Porter-Cologne Water Quality Act, the Federal Clean Water Act, the San Francisco Bay Conservation and Development Commission's (BCDC) Bay Plan, and the Regional Water Quality Control Board (RWQCB) Basin Plan. These various laws, codes, and plans recognize the importance of hydrologic processes such as erosion, sedimentation, tidal exchange, patterns of tidal currents, salinity gradients, and freshwater discharges. Any project activities occurring within flood zones will be subject to regulation by the local flood control agencies. Actions that may affect surface and groundwater quality are subject to regulation by the Federal Clean Water Act, the Porter Cologne Water Quality Act, and to requirements established by the U.S. EPA, California State Water Resources Control Board (SWRCB), the RWQCB, and the local municipalities where the activities will occur.

The RWQCB is the primary agency responsible for protecting water quality in natural waters ("waters of the State") within the Estuary. The Basin Plan designates existing and potential beneficial uses for each water body within its geographic region, sets numeric and narrative water quality objectives to protect the beneficial uses, and describes strategies and time schedules for achieving these water quality objectives. The following beneficial uses have been identified for the shoreline waters of the Bay and are discussed in detail in the Basin Plan:

- Estuarine Habitat
- Industrial Service Supply
- Marine Habitat
- Fish Migration
- Navigation
- Industrial Process Supply
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Water Recreation
- Shellfish Harvesting
- Wildlife Habitat

Generally speaking, uses associated with human consumption, contact recreation, and biological/ecological resources are associated with more stringent water quality objectives than non-contact recreational activities. While the SFRWQCB performs a number of educational, advisory, and planning roles related to improving water quality throughout the Bay, its primary mechanisms to protect ground and surface waters are through adopting, monitoring compliance with, and enforcing waste discharge requirements and water quality certification permits. Such permits may be required for new facilities constructed as part of the WT.

3.7.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Criteria for determining significant impacts to hydrology and water quality were based on the State CEQA Guidelines (Appendix G) and professional judgment. The following impacts were determine in the Initial Study to be potentially significant and are discussed below.

- Create or contribute runoff water that would provide substantial additional sources of polluted runoff
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows (discussed below in the broader context of sea level rise).

IMPACTS AND MITIGATION MEASURES

Impacts to hydrology and water quality were assessed by evaluating all potential direct, indirect, temporary, and permanent impacts. Potential impacts could occur through the following mechanisms:

- Changes in water quality due to short-term construction activities
- Changes in water quality due to long-term use of facilities
- Placement of structures within 100-year flood areas.

Impact 3.7-1. Local Degradation of Water Quality due to Construction Activities

This impact could occur as a result of the construction of new launch/destination facilities and the upgrading of existing facilities consistent with the WT Plan. Specific activities could include the construction and improvement of boat launches/ramps at the water's edge, construction and improvement of parking facilities, construction and improvement of boat storage facilities and the installation of restroom facilities and signage. During these activities it is possible that local water quality could be impacted in a number of ways. Construction activities at the water's edge could cause a localized increase in suspended sediments in the adjacent water body and pollutants such as oils and grease from construction equipment could be introduced directly to the water. The construction of adjacent parking and boat storage facilities and structures such as restrooms and signs could result in sediments and pollutants from construction activities entering the water via runoff. This impact could be potentially **significant but mitigable.**

Mitigation Measure 3.7-1. Employ construction Best Management Practices

Prior to construction activities involving grading or excavation activities at any launch site, the party responsible for construction shall develop a construction plan that will employ best management practices (BMPs) to reduce environmental impacts. As a part of this process the applicant shall develop a Stormwater Pollution Prevention Plan (SWPPP) through the RWQCB for controlling soil erosion and the discharge of construction-related contaminants.

Impact 3.7-2. Degradation of Water Quality due to Runoff from Launch Facilities

The primary potential sources of additional runoff resulting from project implementation are new impervious surfaces from the construction of new or expanded/improved launch facilities and associated parking areas. The runoff from these parking areas may contain oil and grease compounds from automobiles and the pavement material itself. The parking facilities would be relatively small and the amount of runoff generated by them should be minimal. In addition, new boat washing facilities at selected sites could contribute pollutants in runoff and wash water. This impact could be potentially **significant but mitigable**.

Mitigation Measure 3.7-2. Implement stormwater Best Management Practices

All new parking areas, boat washing facilities, and any other paved areas developed as part of WT access improvements shall be designed and operated using BMPs to minimize, eliminate, or treat runoff, and reduce pollutant levels in the runoff. Such BMPs can include the construction/use of oil and grease traps, vegetated swales, raingardens, stormwater wetlands, or other similar structures that would immobilize and/or biogeochemically treat pollutants before they were discharged to surface waters. All BMPs shall comply with Federal Clean Water Act Section c.3 requirements for stormwater detention and treatment. In addition, signs shall be posted at all boat washing facilities asking that only biodegradable soaps be used to wash boats.

Impact 3.7-3. Cause Increased Littering in the Bay

With the expected increase in NMSB use on the Bay due to the implementation of the WT Plan there is the potential for an increase in both intentional and unintentional littering. The WT Plan includes measures to decrease the amount of littering by personal watercraft users through outreach programs and increased signage at launch and destination locations. These actions would inform WT users about proper waste/trash storage and disposal practices. In addition, the improved launch/destination sites would be equipped with facilities for convenient waste/trash disposal and recycling. As recreational users are one of the main groups threatened by poor water quality, WT users would be expected to advocate for better water quality for their own protection. This impact will be **less than significant.**

Impact 3.7-4: Placement of Structures within 100-Year Flood Zones that could Impede or Redirect Flows

Any new launch ramps constructed as part of the project would, out of necessity, be within a 100-year flood zone since they would be on the immediate bayshore. Restrooms and parking lots also may be within the 100-year flood zone, depending on specific access site elevations and local building code requirements (most of which

require raising land surfaces above the 100-year floodplain level). However, most of these facilities would not be in the path of flood flows; they would instead be subject to tidal flooding hazards. The parking lots and permanent structures associated with the WT Plan will be small enough in size and area that their impacts will be minimal.

There is a potential that newly developed/improved WT access sites may require adaptation over time for rising sea levels due to sea level rise. This could affect virtually all WT facilities. Depending on elevation, any immediate shoreline facility could be underwater. Unless floating dock anchorage piers were sufficiently tall, the docks could come loose from anchoring piers during storm surges. ADA access ramps also may need to be lengthened based on the gradient conditions of the shoreline.

This impact would be **potentially significant, but mitigable**.

Mitigation 3.7-4. Design all new permanent structures to be out of the 100-Year flood zone

All new permanent facilities (restroom, information kiosks, etc.) proposed as part of the WT access improvement shall be designed and constructed such that the interior floors would be above the 100-year tide/wave heights, including expected sea level rise.

CUMULATIVE IMPACTS

The cumulative impacts of the WT project on the hydrology and water quality of the Bay would be limited to impacts related to increased impermeable surfaces in the watershed. The proposed increase in impermeable areas due to the WT and the cumulative regional projects would be miniscule within the scope of development in the Bay Area, and would not substantially increase pollution in the Bay. In addition, new or expanded WT facilities and parking would be highly dispersed around the Bay, and impacts would be further mitigated by measures 3.7-1 and 3.7-2, above. For these reasons, the WT project is not expected to contribute cumulatively to water quality degradation in the Bay.

SECTION 3.8
LAND USE PLANNING

3.8 LAND USE PLANNING

INTRODUCTION

This section of the EIR assesses the potential impacts on land uses from the implementation of the San Francisco Bay Area Water Trail (WT) Plan. Impacts are assessed at the program level by comparing the consistency of the WT Plan with policies and goals of the federal, state, and local agencies in whose jurisdictions the 112 WT Backbone Sites fall.

Consistencies with plans, goals and policies that specifically concern wildlife (such as habitat conservation plans or natural community conservation plans) are addressed in **Section 3.4 Biological Resources** and issues associated with parks, land trails, and navigational safety are to be found in **Section 3.1 Recreation** and **Section 3.2 Public Services and Navigational Safety**, respectively.

3.8.1 ENVIRONMENTAL SETTING

REGIONAL LAND USE SETTING

The project area includes San Francisco Bay and, in particular, the water and land areas at the edge of the Bay that include existing access points and NMSB use. The land uses surrounding the Bay vary widely, encompassing existing marinas, open space (including parklands, salt ponds and wildlife refuges), ports, residential areas, commercial areas (including hotels and restaurants), and industrial areas. These general areas are summarized as Urbanized Shoreline, Urban/Rural Interface, and Open Space Agricultural Uses in Section 3.3, Aesthetics. Typical land uses surrounding the proposed Backbone Sites are summarized below.

BACKBONE SITES

Sites in the North Bay are typically in marinas and parks. Sites located along the East Bay range from parks (e.g. A5, Shorebird Park, Emeryville) and marinas (e.g. A2, Berkeley Marina Ramp) to commercial areas (A9, Jack London Square/CCK) and salt ponds (A24 Jarvis Landing, Newark). A large portion of the southern Bay margin falls within the San Francisco Bay National Wildlife Refuge (including access sites SM25, Corkscrew Slough Viewing Platform, Redwood City and A24 Jarvis Landing, Newark). On the western shore of the Bay, sites are located adjacent to park (SF2, India Basin Shoreline Park, San Francisco), marina (SM6, Docktown Marina, Redwood City), commercial (SF10, Aquatic Park, San Francisco), and industrialized areas (SF1, Candlestick Point State Recreation Area).

The project area includes WT access sites that are in heavily industrialized parts of Alameda County, such as around the Port of Oakland (e.g. A8, Middle Harbor Shoreline Park) and Oakland airport (A18, Doolittle Drive, Airport Channel), as well as sites in remote parts of Sonoma (Sn3 Hudeman Slough), Napa (N1, Cutting's Wharf) and Solano Counties (So5, Belden's Landing, Fairfield)

The WT Plan analyzed existing access onto the Bay and concluded that at present there are over 135 launch and landing sites for human-powered boats and beachable sail craft. Of those, the general land use categories include:

- Waterfront park (50%)
- Marina/harbor (17%)
- Public boat launch ramp/float (13%)
- Public access area (12%)
- Wildlife refuge/reserve (1%)
- Privately owned business (7%).

REGULATORY SETTING

A wide variety of government agencies have jurisdiction over the 112 Backbone Sites, and any potential future WT sites around the Bay. These include federal, state, regional, and local agencies with regulations and plans that control development on the margins of the Bay as well as the Bay's open waters.

FEDERAL AGENCIES AND REGULATIONS

NATIONAL PARK SERVICE AND GOLDEN GATE NATIONAL RECREATION AREA

The National Park Service (NPS) has jurisdiction over several bayfront National Parks. At Golden Gate National Recreation Area (GGNRA), managers balance the preservation of significant historic resources and important natural areas with provision of recreation opportunities for 16 million visitors per year. The NPS Management Policies stipulate that park managers only allow uses that are "(1) appropriate to the purpose for which the park was established, and (2) can be sustained without causing unacceptable impacts to a park's resources or values. Recreational activities and other uses that would impair a park's resources, values, or purposes cannot be allowed." (NPS 2001) NMSB launching and overnight camping are existing activities in the GGNRA. NMSB launching is also an existing activity in San Francisco Maritime National Historic Park.

NPS manages one San Francisco GGNRA site: SF12, Crissy Field; and two Sausalito GGNRA sites: M1, Kirby Cove and M2, Horseshoe Cove. General Management strategies for the park can be found in *Management Policies 2006* (NPS 2006). The GGNRA *General Management Plan* (NPS 1980) is in the process of being updated, but is not anticipated to represent a significant change in direction of park management (pers. comm. Brian Aviles, January 10, 2008) with regard to access to these sites by NMSB.

Management of SF12, Crissy Field is described in the 1996 *Crissy Field Plan Environmental Assessment* (NPS 1996). Plans for Kirby Cove will be included in the updated *General Management Plan*, and public use is supported in the current plan. Plans for Horseshoe Cove are contained in the *Fort Baker Plan and Final Environmental Impact Statement* (NPS, 2000) (which is currently being revised) and Crissy Field in the *Final General Management Plan Amendment: Creating a Park for the 21st Century, from Military Post to National Park, Presidio of San Francisco, Golden Gate National Recreation Area, California* (NPS, 1994). NMSB use is consistent with these NPS land management plans.

Site CC15, Marina Bay Park (managed by the City of Richmond), is located in Rosie the Riveter/World War II Home Front National Historical Park, which is owned by NPS. The management plan for the park is currently being updated (http://www.nps.gov/rori/parkmgmt/planning.htm).

U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service (FWS) owns and manages National Wildlife Refuges and Bay waters totaling 30,000 acres. The National Wildlife Refuge System Improvement Act of 1997 designates wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as "priority general public uses." When these activities are compatible with species protection goals (as determined by FWS), they are welcome on refuges and receive priority over other uses. Additionally, the law states, in part, that "compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System, directly related to the mission of the System and the purposes of many refuges, and which generally fosters refuge management and through which the American public can develop an appreciation for fish and wildlife…" Access to Refuge waters and shoreline in the Bay for NMSB recreation is regulated by the Refuge managers.

FWS manages areas proposed for three Backbone Sites in National Wildlife Refuges. Two of these (SM25, Corkscrew Slough Viewing Platform, Bair Island, Redwood City, and A24 Jarvis Landing, Newark) are part of Don Edwards San Francisco Bay National Wildlife Refuge (U.S. Fish and Wildlife Service 2003), which encompasses land on either side of the Dumbarton Bridge. The Jarvis Landing site is co-managed with the salt producer, Cargill. Site A27, Coyote Hills is on an Alameda County Flood Control District levee, outside of the Don Edwards National Wildlife Reserve. It is managed by EBRPD – see below). A site is planned for the San Pablo Bay NWR but its location is uncertain at this time.

A Comprehensive Conservation Plan (CCP) is being prepared for the San Pablo Bay NWR and is expected to be finished in 2009. A CCP for Don Edwards NWR is expected to be finished in 2012. Designated land uses in the CCPs are expected to be compatible with the use of the planned WT Backbone Sites (Winnie Chan, FWS, pers. comm. January 22, 2008).

SOUTH BAY SALT POND RESTORATION PROJECT

The State of California and the federal government are currently working on restoration plans for the large area (15,100 acres) of former salt ponds in the South Bay. The land is owned and managed by FWS and CDFG and SCC is leading restoration planning and implementation in collaboration with these agencies and others. The restoration will affect the distribution of levees and ponds and public access to these lands. An EIR/EIS for the South Bay Salt Pond Restoration was completed in 2008 (http://www.southbayrestoration.org) and has been state certified. A federal Record of Decision is expected before the end of 2008. Phase I Restoration is planned to begin in late 2008.

The South Bay Salt Pond project could have a direct affect on the following sites:

- SM2: Ravenswood Open Space Preserve (Managed by Midpeninsula Regional Open Space District)
- A22: Eden Landing Ecological Reserve (Owned by CDFG)

The following sites are on land adjacent to land that will be restored and could be affected indirectly.

- SC3: Alviso Marina (County of Santa Clara)
- A27: Coyote Hills (EBRPD/Alameda County Flood Control and Water Conservation District)

STATE AGENCIES AND REGULATIONS

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

The San Francisco Bay Conservation and Development Commission (BCDC) was established in 1965 through the McAteer-Petris Act and has authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction. This area includes Bay waters up to the shoreline, and the land area between the shoreline and the line 100 feet upland and parallel to the shoreline, which is defined as the Commission's 100-foot "shoreline band" jurisdiction. The shoreline is located at mean high tide line, except in marsh areas, where the shoreline is located at five feet above mean sea level.

The stated objectives of BCDC are:

- Objective 1: Protect the Bay as a great natural resource for the benefit of present and future generations.
- Objective 2: Develop the Bay and its shoreline to their highest potential with a minimum of Bay filling.

BCDC's actions are governed by the *San Francisco Bay Plan*, adopted in 1968 and subsequently revised. The *Bay Plan* guides protection and use of San Francisco Bay and its shoreline. This is discussed in greater detail below. The *Suisun Marsh Protection Plan* (BCDC, 1976) covers parts of Solano County south of Suisun City and includes site So5, Belden's Landing.

BCDC BAY PLAN

Policies relevant to the construction of the WT can be found in several sections of the Bay Plan. Included below are relevant policies related to Recreation and Public Access. Policies relating to Fish, Other Aquatic Organisms, and Wildlife, are discussed in Section **3.4 Biological Resources**; Appearance, Design and Scenic Views in **Section 3.3 Aesthetics**; policies relating to Safety of Fill and Sea Level Rise are in **Section 3.6 Hydrology and Water Quality**.

Recreation

1. *Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and improved...*

3. Recreational facilities such as waterfront parks, trails, marinas, live-aboard boats, NMSB access, fishing piers, launching lanes, and beaches, should be encouraged and allowed by the Commission, provided that they are located, improved and managed consistent with the following standards:

a. ***General****. Recreational facilities should:*

(1) Be well distributed around the shores of the Bay... Any concentrations of facilities should be as close to major population centers as is feasible;

(2) Not pre-empt land or water area needed for other priority uses, but efforts should be made to integrate recreation into such facilities to the extent that they are compatible;

(4) Be consistent with the public access policies that address wildlife compatibility and disturbance. In addition:

(5) Compatible public and commercial recreation facilities should be clustered to the extent feasible to permit joint use of ancillary facilities...

(6) Sites, features or facilities within designated waterfront parks that provide optimal conditions for specific water-orientated recreational uses should be preserved and, where appropriate, enhanced for those uses...

(7) Access to marinas, launch ramps, beaches, fishing piers, and other recreational facilities should be clearly posted with signs and easily available from parking reserved for the public or from public streets or trails…

b. ***Marinas****.*

(1) Marinas should be allowed at any suitable site on the Bay….At suitable sites, the Commission should encourage new marinas.

(2) Fill should be permitted for marina facilities that must be in or over the Bay…

(4) Marinas should include public amenities, such as viewing areas, restrooms, public mooring docks or floats and moorages for transient recreational boaters, NMSB launching facilities, public parking, substantial physical and visual access; and maintenance for all facilities.

e. ***NMSBs****.*

(1) Where practicable, access facilities for NMSBs should be incorporated into waterfront parks, marinas, launching ramps and beaches, especially near popular waterfront destinations.

(2) Access points should be located, improved and managed to avoid significant adverse affects on wildlife and their habitats, should not interfere with commercial navigation, or security and exclusion zones or pose a danger to recreational boaters from commercial shipping operations, and should provide for diverse, water-accessible overnight accommodations, including camping, where acceptable to park operations.

(3) Sufficient, convenient parking …should be provided at sites improved for launching NMSBs. Where feasible overnight parking should be provided.

(4) Site improvements, such as landing and launching facilities, restrooms, rigging areas, equipment storage and concessions, and educational programs that address navigational safety, security, and wildlife compatibility and disturbance should be provided, consistent with the use of the site.

(5) Facilities for boating organizations that provide training and stewardship, operate concessions, provide storage or boathouses should be allowed in recreational facilities where appropriate.

(6) Design standards for NMSB launching access should be developed to guide the improvement of these facilities…

4. *To assure optimum use of the Bay for recreation, the following facilities should be encouraged in waterfront parks and wildlife refuges:*

   a. ***In waterfront parks**.*

   (1) Where possible, parks should provide some camping facilities accessible only by boat, and docking and picnic facilities for boaters.

   (4) Public launching facilities for a variety of boats and other water-oriented recreational craft…should be provided in waterfront parks where feasible.

   (9) In waterfront parks that serve as gateways to wildlife refuges, interpretative materials and programs that inform visitors about the wildlife and habitat values present in the park and wildlife refuges should be provided.

7. *Because of the need to increase the recreational opportunities available to Bay Area residents, small amounts of Bay fill may be allowed…*
8. *Signs and other information regarding shipping lanes, ferry routes, U.S. Coast Guard rules for navigation…weather, tide, current and wind hazards, the location of habitat and wildlife areas that should be avoided, and safety guidelines for smaller recreational craft, should be provided at …recreational watercraft use areas.*
9. *Ferry terminals may be allowed in waterfront park priority use areas and marinas and near fishing piers and launching lanes, provided the development and operations of the ferry facilities do not interfere with current or future park and recreational uses, and navigational safety can be assured...*

Public Access

2. *In addition to the public access to the Bay provided by waterfront parks, beaches, marinas and fishing piers, maximum feasible access to and along the waterfront …should be provided in and through every new development in the Bay…*
3. *Public access to some natural areas should be provided to permit study and enjoyment of these areas. However some wildlife are sensitive to human intrusion.*

For this reasons, projects in such areas should be carefully evaluated in consultation with the appropriate agencies...

Shoreline Priority Use Areas

The Bay Plan designates shoreline priority use areas. Priority uses include: Wildlife Refuge, Waterfront Park/Beach, Water-related Industry, Port and Airport. Bay Plan Policies applicable to the various Priority Use Areas are identified on the Bay Plan maps.

Specific land use policies applicable to WT Backbone Sites would be addressed in CEQA reviews of any specific access improvements at the time such improvements are proposed.

BCDC SUISUN MARSH PROTECTION PLAN

Site So5: Belden's Landing is located in Suisun Marsh and governed by the Suisun Marsh Protection Plan (BCDC, 1976). Based on the map in the Plan, Site So5 is at the boundary of the primary and secondary management areas. The primary management area consists of tidal marshes, managed wetlands, seasonal marshes and lowland grasslands and represents an area of critical importance to Marsh wildlife. Existing land uses are planned to continue and land and water areas managed to achieve the following objectives:

- Preservation and enhancement of Marsh habitat
- Provision of habitat attractive to waterfowl
- Improvement of water distribution and levee systems
- Encouragement of agricultural and grazing practices consistent with wildlife use, waterfowl hunting and elimination of mosquito breeding
- Restoration of historic wetlands.

The secondary management area consists of upland grasslands and cultivated lands and is planned to act as a buffer area to insulate the habitats within the primary management area. Within the secondary management area, existing grazing and agricultural uses are intended to continue and agricultural practices favoring wildlife use and habitat enhancement are to be encouraged.

As of 1976, Belden's Landing was proposed to become a County Park and has since become one. Passive recreation compatible with Marsh protection was proposed, along with the construction of a boat launching ramp at Belden's Landing, which has since been built.

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

As with other resource management agencies, California Department of Parks and Recreation (California State Parks) has a dual mission to protect the State's "most valued natural and cultural resources," and offer "opportunities for high-quality outdoor recreation." (California State Parks 2004) The California State Parks System Plan (California State Parks 2002) outlines five core programs for the Park system: resource protection, education/interpretation, provision of facilities (including camping and restrooms) at parks, public safety and recreation. The Plan does not specifically mention NMSB use, but three state park sites in the Bay region have facilities for launching these

types of boats, and Angel Island State Park has overnight camping facilities that are frequently used by paddle-boaters.

California State Parks manages five Bay shoreline parks on which five Backbone Sites would be located: China Camp State Park, San Rafael (M39, China Camp State Park; M40, Bull Head Flat); Angel Island State Park (M17, Angel Island); Candlestick Point State Recreation Area (SF1); and Eastshore State Park (A1, Albany Beach).

The *China Camp General Plan* (California State Parks, 1979); *Angel Island General Development Plan* (California State Parks, 1978); *Angel Island State Park, General Development Plan, Expanded Tram Service Amendment, Preliminary* (California State Parks, 1996); *Candlestick Point State Recreation Area General Plan* (California State Parks, 1978, amended 1987); and *Eastshore State Park General Plan* (California State Parks, 2002) describe the plans for each of these three areas respectively and include policies that relate to wildlife habitat and water quality. For example, Eastshore State Park General Plan identifies three different land use categories within the park district that have different management priorities:

- Preservation Areas: Unique or fragile habitat areas where resources are protected and preserved and recreation activities are prohibited.
- Conservation Areas: Areas where natural habitat values are protected and enhanced while allowing lower intensity recreation that is compatible with and dependent on those values.
- Recreation Areas: Sites that can accommodate more intensive recreation.

Compliance of any specific WT site improvements with these plans needs to be assessed at the project level.

CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Department of Fish and Game (CDFG) "manages California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public."

CDFG owns and/or manages seven wildlife areas, eight ecological reserves, five state marine parks and one state marine conservation area around the Bay. Wildlife areas are managed to protect and enhance habitat for wildlife species, and to provide the public with wildlife-related recreational uses such as hunting, fishing and wildlife observation (Blankinship 1999). Ecological reserves are designed to conserve areas for the protection of rare plants, animals and habitats, and to provide areas for education, scientific research and recreation where these activities do not have adverse effects on wildlife and habitats (Lewis 2001). Inclusion of any WT launch sites within wildlife areas or ecological reserves is subject to the compatibility of NMSB activities with the management objectives for these areas. Existing state marine parks and conservation areas were originally established as ecological reserves, but the non-terrestrial portions of these reserves have been folded into the California Marine Life Protection Act initiative. These non-terrestrial marine or estuarine areas are specially managed for natural, historic or cultural resource preservation (CDFG, website). CDFG has discretion to establish restrictions on recreation in these areas on a case-by-case basis.

One Backbone Site would be located in a CDFG Ecological Reserve: A22, Eden Landing Ecological Reserve (Hayward). Eden Landing Ecological Reserve is governed by an

existing management plan (RMI 1999). Site N7, Green Island Boat Launch Park in American Canyon is within the Napa Sonoma Marshes Wildlife Area (NSMWA), also managed by CDFG. A plan is in progress for NSMWA (pers. comm. January 23, 2008, Brian Shelton, CDFG, Yountville).

CALIFORNIA STATE UNIVERSITY (CSU)

One proposed Backbone Site, So2 in Vallejo, is located in the grounds of the California Maritime Academy, one of the campuses of the California State University (CSU) system. It is not known at this time if there is a management plan that would govern use of this site (pers. comm. Roger Jaeckel, California Maritime Academy, January 23, 2008).

LOCAL AND REGIONAL AGENCIES AND REGULATIONS

ASSOCIATION OF BAY AREA GOVERNMENTS (ABAG) BAY TRAIL

The San Francisco Bay Trail is a planned 500-mile network of bicycling and hiking trails around the Bay, of which approximately half has been completed. The Bay Trail Plan was adopted by ABAG in 1989. More than 70 of the Backbone Sites are on or near the San Francisco Bay Trail. The WT Plan encourages links between the land and water trails. The Bay Trail Plan (and its overlap with WT access points) is described in Section 3.1 Recreation.

COUNTY AND CITY GOVERNMENTS

Counties and cities around the Bay also control land uses (either directly or through county and city government agencies) of shoreline areas and wetlands as waterfront parks and open space. Local (city or county) land use planning jurisdiction applies to lands not under state, federal, or tribal jurisdiction. Each city and county has a General Plan, including land use, conservation, and open space elements; and a zoning ordinance that controls development and land uses in areas under local jurisdiction (i.e., non-state, federal, or tribal lands). General Plan land use designations and zoning ordinances that implement those designations control and restrict land uses within local agency jurisdiction, and may preclude certain land uses such as overnight camping. New developments or land use changes are reviewed by local agencies for compliance with their applicable General Plan and zoning regulations.

Recreational boating rules in Section 660 of the State Harbors and Navigation Code empower local governments to establish ordinances that regulate navigation in waters within their jurisdiction through time-of-day restrictions, speed zones, special-use areas, and sanitation and pollution controls (http://law.onecle.com/california/harbors/660.html).

SPECIAL DISTRICTS/AGENCIES

San Francisco Bay Water Emergency Transportation Authority (WETA)/Formerly Water Transport Authority (WTA)

The Water Emergency Transportation Authority has adopted an Implementation and Operations Plan (WTA 2002). That plan is described in Section 3.2: Public Services and Navigational Safety. New terminals may be located in: Antioch, Berkeley,

Hercules/Rodeo, Martinez, Mission Bay (San Francisco), Oyster Point (South San Francisco), Redwood City, Richmond, and Treasure Island (San Francisco).

East Bay Regional Park District

The East Bay Regional Park District's (EBRPD) management priorities range from recreation-focused to emphasizing habitat preservation, depending on the park resources.

EBRPD manages 15 Backbone Site locations in Oakland, Alameda, San Leandro, Hayward, Fremont, Point Richmond, El Cerrito, Martinez, Pinole and Rodeo in the following regional parks: Middle Harbor Shoreline Park, Crowne Memorial State Beach, MLK Jr. Regional Shoreline, Coyote Hills Regional Park, Oyster Bay Regional Shoreline, Hayward Regional Shoreline, Point Isabel Regional Shoreline, Point Pinole Regional Shoreline, Miller/Knox Regional Shoreline, Carquinez Strait Regional Shoreline, Bay Point Wetlands and Lone Tree Point.

Land uses in EBRPD are described in *Master Plan 1997* (East Bay Regional Park District, 1997) and an accompanying map (East Bay Regional Park District, 2007).

Midpeninsula Regional Open Space District

The Midpeninsula Regional Open Space District (MROSD) manages its preserves under a dual mission to preserve and protect natural resources and to provide low intensity recreation and environmental education opportunities (Midpeninsula Regional Open Space District, website). Ravenswood Preserve is a shoreline preserve managed by the Midpeninsula Regional Open Space District containing Backbone Site SM2. The District's goals are governed by the *Midpeninsula Open Space Resource Management Five-Year Strategic Plan* (MROSD 2003). There is an ongoing series of *Use and Management Plan Amendments* (MROSD 1982-2006) that pertain to the management of Ravenswood.

Flood Control Districts

Alameda County Flood Control District owns the channel of Alameda Creek and the levee to the south on which site A27 Coyote Hills is located. The levee and channel have been leased to the EBRPD for recreational use. As part of the plan for salt pond restoration, it is possible that the northern levee will be breached and access will only be available from the south. This is one of several alternatives under consideration in the EIR/EIS for the South Bay Salt Pond Restoration Project (EDAW 2007).

Ports

One site, SM4, is located at Redwood City Municipal Marina, which is under the jurisdiction of the Port of Redwood City. Two sites, SF4, Islais Creek, and SF7, Pier 52 Boat Launch, are managed by the Port of San Francisco. Site A8, Middle Harbor Park, is operated by EBRPD but owned by the Port of Oakland. Ports are public entities generally run by autonomous commissions appointed by the city government. In general, port lands are subject to city and county general plans and zoning ordinances.

3.8.3 IMPACTS AND MITIGATION MEASURES

Of the 112 Backbone Sites, 95 are existing launch or destination sites and 17 are planned. It is possible that a few of these sites have grown "organically" in response to user pressure and their use is not in accordance with all plans and policies of the land owners

and managers. The 57 HOS are already developed and require only minor improvements such as signage for designation as WT sites. Non-HOS sites may require various additional amenities, including structures such as bathrooms and more parking.

As each site is unique, and the extent/type/location of any proposed facility improvements are unknown at this time, it is not possible or appropriate for this Program EIR to assess the potential compliance of any such development with local plans and policies. Such an assessment would be conducted at the time of proposed Trailhead designation for each site.

As described in Section 3.0, this EIR assumes that NMSB use could in theory increase at any of the proposed Backbone Sites as a result of WT Trailhead designation. In practice, some sites are unlikely to experience increased use for a variety of reasons, such as parking limitations or challenging conditions that only advanced recreationists could accommodate. Refer also to Section 2.0, Project Description, and Section 3.1, Recreation, for discussions of expected increased or decreased use of sites.

SIGNIFICANCE CRITERIA

Impacts are considered significant if they would:

- Conflict with an established plan by a regulatory agency (such as those listed above) with management jurisdiction over a proposed WT site.
- Conflict with the zoning or general plan land use designation for the city or county in which the proposed site is located.
- Result in an incompatibility with adjacent or nearby land uses.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Conflict with the BCDC Bay Plan.

BCDC, through the San Francisco Bay Plan (rev. 2007), is an agency with regional jurisdiction over WT sites. BCDC has several plans and policies pertinent to land use and the WT that are summarized in Table 3.8-1.

TABLE 3.8-1: SUMMARY OF WT PLAN COMPLIANCE WITH BCDC BAY PLAN

Agency/Plan	Plan/Policy	Compliance at Program Level
BCDC, Bay Plan	Recreation	The Water Trail Plan provides expanded recreational opportunities on the Bay and is generally consistent with the Bay Plan Policies on recreation, waterfront parks and priority use areas.
	Public Access	The Water Trail Plan would facilitate the provision of unique and exceptional public access both onto and on the Bay. The intention of the Bay Plan is to increase it to the maximum extent possible.

This impact is considered **less than significant.**

Impact 3.8-2: Conflict with Federal, State, or Local Land Use Plans and Policies

The designation and use of a particular site as part of the WT may conflict with a management plan established by the federal, state, regional or local land use planning agencies. As consultation with applicable federal, state, and regional agencies was

conducted in the planning stages of the WT, and those agencies have reviewed Backbone Sites prior to their inclusion in the WT Plan, such conflicts would be unlikely. Conflicts with local land use plans and policies also are possible, though unlikely.

The minimal improvements associated with HOS sites would be unlikely to result in land use conflicts or conflicts with land use management plans and implementing regulations. Signage may be subject to local design review, depending on the size of signage and specifics of local zoning ordinances.

The WT Plan, Strategy 4, requires "Coordinated plans for trailhead development, management and use to be consistent with existing policies, plans and priorities of land and resource managers at and around trial heads…. This coordination should be done by launch site managers during site assessment and planning for trailhead designation." This strategy, as implemented in the Trailhead planning and designation process outlined in the WT Plan, would reduce conflicts between trailhead designation and applicable federal, state, regional, and local plans, policies, and strategies, to a **less than significant** level.

Impact 3.8-3: Incompatibility with Adjacent or Nearby Land Uses

Operation of specific WT sites may be incompatible with adjacent or nearby land uses, sensitive biological resources, and/or navigational hazards. Potential land use conflicts resulting from nearby marina activities, ferry terminals, or shipping traffic, are addressed in Section 3.1 Recreation and Section 3.2 Public Services and Navigation. Incompatibilities with wildlife habitat are discussed in Section 3.4 Biological Resources. New campgrounds also may result in noise, public service demands, or other incompatibilities with nearby land uses. These impacts would need to be addressed in Trailhead Plans and their associated CEQA review. This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.8-3: Reduce or eliminate land use incompatibilities through implementation of identified mitigation measures, revised site plan, or non-designation.

Trailhead Plans and associated CEQA reviews shall evaluate these potential conflicts and apply mitigations as identified in the Biological Resources, Navigational Hazards, and Recreation sections of this EIR. If inclusion of a particular site in the WT results in unmitigable land (or water) use conflicts, the Trailhead Plan shall be revised to avoid the conflict, or the site excluded from WT designation.

CUMULATIVE IMPACTS

Potential impacts to land use planning would be site-specific and present no cumulative impacts. Because of the dispersed site locations, overlapping land use impacts are unlikely.

SECTION 3.9
TRANSPORTATION, CIRCULATION AND PARKING

3.9 TRANSPORTATION, CIRCULATION AND PARKING

This section of the Draft EIR identifies potential transportation, circulation and parking impacts that could result from the proposed project. In general, these are potential impacts to local streets and intersections, which provide access to proposed project trailhead sites, resulting from increased traffic levels, and potential increases in parking levels at trailhead locations. Traffic, circulation and parking impacts were evaluated using a combination of site reconnaissance, aerial photographs, and review of existing policies in various general plans.

3.9.1 TRANSPORTATION, CIRCULATION AND PARKING SETTING

OVERVIEW OF TRANSPORTATION, CIRCULATION AND PARKING

The project envisions the potential use of a number of existing access sites in and around San Francisco Bay, as well as the potential for the use of a number of new launches. Specifically, the potential use of existing access sites in the following jurisdictions is proposed:

Albany	Berkeley	Emeryville
Oakland	Alameda	San Leandro
Newark	Martinez	Pinole
Richmond	El Cerrito	Sausalito
Mill Valley	Tiburon	Corte Madera
Larkspur	San Rafael	Novato
Napa County	City of Napa	Palo Alto
San Francisco	Marin County	Redwood City
Redwood Shores	San Mateo	Burlingame
S. San Francisco	Brisbane	San Mateo
Sonoma County	Petaluma	Vallejo
Fairfield	Benicia	Suisun City
Hayward	Rodeo	American Canyon

The development of new launches is anticipated at sites within the following communities:

Rodeo	Richmond	Redwood City
Martinez	Corte Madera	Oakland
Alviso	San Francisco	Hayward

Existing transportation, circulation and parking conditions in and around the existing and planned launch areas vary quite widely. In general, existing sites are sized to accommodate their existing use, with some instances of overflow occurring during peak use seasons and weekends. As all sites are located on the San Francisco Bay shoreline, they typically do not occur at locations where heavy traffic volumes and severe levels of peak hour congestion occur. (Most commute corridors do not front on the San Francisco Bay). Observations of existing conditions have also identified that the periods of peak roadway use do not coincide with the periods of peak project facility use. In the Bay

Area, the peak period for transportation facilities typically occurs during the weekday morning peak commute hour (7 to 9 AM) and the weekday evening peak hour (4 to 6 PM). Roadway segments, intersections and transportation infrastructure are generally designed to serve traffic levels that prevail during these peak periods. Normally, traffic levels are substantially lower during other hours of the day and on weekends. During these non-peak periods, good levels of service and relatively low levels of congestion occur. As traffic associated with the proposed project sites would normally be expected to be the greatest during weekends and on off-peak weekday periods, substantial negative effects on traffic are not anticipated to occur.

3.9.2 REGULATORY SETTING

STATE AGENCIES AND REGULATIONS

The California Department of Transportation (Caltrans) is responsible for conditions on all State Highways. Within the area of the project, the Caltrans District 4 Intergovernmental Review/California Environmental Quality Act (IGR/CEQA) Branch is responsible for the review of Traffic Impact Studies.

LOCAL AND REGIONAL AGENCIES AND REGULATIONS

As described in the section above, the project would potentially affect conditions on local roadways within more than 40 different local jurisdictions. The regulatory setting within each local jurisdiction is unique, and each has its own general plan policies, plans and requirements with respect to transportation facilities within their area of influence.

Each of the nine Bay Area counties has a designated Congestion Management Agency (CMA), responsible for the monitoring of traffic conditions on regionally specific facilities within their sphere of influence and development, prioritization and funding of improvement projects for regionally significant improvements. County CMAs affected by the project include: Solano (STA), Napa (NCTPA), Marin (TAM), Alameda (ACCMA), San Francisco (SFCTA), Santa Clara (VTA) and San Mateo (SMCTA). For those portions of the proposed project that may impact regionally significant transportation facilities, the guidelines of these agencies must be followed.

3.9.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

In general, the project would result in a significant adverse impact if it were to:

- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Result in inadequate parking capacity.

IMPACTS AND Mitigation MEASURES

Impact 3.9-1. Degradation in Levels of Service on Access Roadways

At the program level, it is not possible to precisely predict any specific changes (increases or decreases) in use levels by location. However, general trends in the boating industry do not suggest that there will be any significant, sustained increase in use levels for the types of NMSBs on the Bay that are the focus of the proposed project, beyond that attributed to the general population growth of the Bay Area (about 0.9% annually). Thus improvements associated with the proposed project would not be expected to substantially increase activity levels (traffic or parking) at existing launch facilities which are included as part of the Plan. HOS sites would not be expected to have the potential for increased traffic or parking impacts based on the addition of signs. However, new launch facilities or major new facility development associated with the WT could potentially generate new traffic and parking impacts in proportion to the level and kind of usage they attract, which is not possible to precisely predict at the current programmatic level of review.

The generation of additional traffic at new access facilities or development of substantial new infrastructure for NMSB at a facility that could attract substantial new use of the site could result in unacceptable degradations in Levels of Service on roadways and intersections that provide access to the sites. This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.9-1: Undertake Traffic Assessment Prior to Designation of New or Enhanced WT Sites

During the CEQA review of Trailhead Plans for each new access site or development of substantial new infrastructure for NMSB at an existing facility, an analysis of potential traffic impacts for each site under consideration shall be conducted in accordance with the methodology and guidelines of the subject jurisdiction within which it lies. If roadways of regional influence are found to be adversely affected by the increased traffic levels, the access to the proposed new facilities shall comply with the requirements of the local jurisdiction, applicable Congestion Management Agency, and/or Caltrans, as appropriate.

Impact 3.9-2. Inadequate Parking at Newer Enhanced WT Site

Parking levels at existing access facilities may change in cases of development of substantial new infrastructure that could potentially substantially increase usage of a facility. HOS sites would not result in significant parking impacts. New or substantially expanded access facilities could generate new parking need in proportion to the level of usage they attract. This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.9-2: Undertake parking study prior to development of new or enhanced WT site

CEQA reviews of Trailhead Plans for each new access site or development of substantial new infrastructure for NMSB at an existing facility shall include analysis to estimate the amount of use associated with the proposed site, and that use's parking demand. Parking shall be provided in accordance with the anticipated need and the jurisdiction in which the site lies.

Impact 3.9-3. Inadequate Emergency Vehicle Access

Project sites could be designated in the WT Plan that do not offer adequate emergency vehicle access. This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.9-3: Study emergency vehicle access at new WT sites

CEQA reviews of Trailhead Plans for each new access site or development of substantial new infrastructure that could potentially substantially increase usage at an existing facility shall include analysis to determine if adequate emergency vehicle access is provided. This shall include an evaluation of truck turning radii on access roadways and intersections to ensure that emergency vehicles will be able to access the facilities. Potential delays to emergency vehicle access due to railroad crossing blockages also should be taken into consideration.

Impact 3.9-4. Hazards Due to Unsafe Access Roadways

Project sites could be selected which do not offer safe vehicular access (e.g. conflict with other roadway movements or railroad crossings, have inadequate roadway geometry for vehicles with trailers, or have inadequate sight distances). This impact is considered **potentially significant but mitigable**.

Mitigation Measure 3.9-4: Study plans for new WT site to determine safety for vehicular access

CEQA reviews of Trailhead Plans for each new access site or development of substantial new infrastructure that could potentially substantially increase usage at an existing facility shall include analysis to determine if safe vehicular access is provided. This shall include an evaluation of the geometry on roadways that provide access to launch sites. If unsafe geometry is suspected, the study shall include a further review of historical access records to determine if safety hazards exist, and develop potential mitigation measures as necessary. All at-grade roadway/railroad crossings on access roadways shall be reviewed in detail to determine if they meet modern safety standards and California Public Utilities Commission requirements.

CUMULATIVE IMPACTS

Potential impacts to transportation, circulation and parking and corresponding mitigation measures are site-specific and present no cumulative impact.

4. ALTERNATIVES TO THE PROJECT

4. ALTERNATIVES TO THE PROJECT

4.1 GENERAL CEQA REQUIREMENTS

CEQA requires that a reasonable range of feasible alternatives to the proposed project be described and considered within an EIR. The alternatives considered should represent scenarios that could feasibly attain most of the basic objectives of the project, and would avoid or substantially lessen any of the significant environmental effects of the project. The purpose of this process is to provide decision makers and the public with a discussion of viable development options and to document that other options to the proposal were considered within the application process (CEQA Guidelines, §15126.6).

CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Where a lead agency has determined that even after the adoption of all feasible mitigation measures, a project as proposed would still cause significant environmental effects that cannot be substantially lessened or avoided, the agency, prior to approving the project as mitigated, must first determine whether, with respect to such impacts, there remain any project alternatives that are both environmentally superior and feasible within the meaning of CEQA.

CEQA provides the following guidelines for discussing project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation (§15126.6(a)).
- An EIR is not required to consider alternatives that are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project (§15126.6(b)).
- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects §15126.6(c)).
- The EIR should briefly describe the rationale for selecting the alternatives to be discussed §15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project §15126.6(d)).

4.2 PROJECT ALTERNATIVES

Although the Proposed Project was determined not to have any significant unmitigable impacts, a range of alternatives is presented in this document for the consideration of the public and decision-makers.

ALTERNATIVES CONSIDERED AND REJECTED FROM FURTHER ANALYSIS

The SCC, as CEQA lead agency, considered a full range of alternatives to the proposed project. These alternatives included:

- Partial Water Trail Alternative: This alternative would involve limiting the Water Trail to certain areas of the Bay (i.e., the Central Bay, South Bay, West Bay, East Bay, or North Bay). This alternative was rejected because it would not meet the legislatively-mandated goals of the WT Act to improve access within, and provide recreational opportunities to, the entire Bay Area.
- Site Closure Alternative: An alternative that would result in the closure of access sites that may adversely affect sensitive resources was considered but eliminated because under the Water Trail Plan, the Project Management Team has only the authority to designate a WT site, but has no legal authority to order closure of existing or future bay access sites. In addition, under the WT Plan, by providing educational media and programs, existing impacts may well be reduced.
- No Major New Facilities Alternative: An alternative that would reduce or eliminate construction impacts at trailheads (either with regard to impacts of the construction, or impacts due to increased use associated with enhanced facilities) by prohibiting major facility improvements was considered and determined to be infeasible. Under the Water Trail Plan, the Project Management Team has only the authority to designate a WT site, but no legal authority to prohibit development of existing or future sites. Furthermore, such an alternative would undermine one of the fundamental goals of the Water Trail Act, which is to provide enhanced public access and recreational opportunities around the Bay shore and waters.

ALTERNATIVES EVALUATED IN THIS EIR

The Proposed Project is described in Chapter 2 of this EIR and evaluated in Chapter 3. Two alternatives to the Proposed Project are evaluated in this chapter: the Modified High Opportunity Sites (HOS) only alternative, and the CEQA-mandated No Project Alternative. These are summarized below, along with their potential impacts.

ALTERNATIVE 1:REVISED HIGH OPPORTUNITY SITES (HOS) ONLY

As described in Chapter 2, Project Description, High Opportunity Sites (HOS) are considered those that have no major management issues and would require minimal modification (i.e., signage only) for inclusion in the Water Trail. Under Alternative 1, the Water Trail would be limited to HOS sites only, and the list of HOS sites includes only 47 sites as opposed to the 57 sites that are part of the Proposed Project. The modified list of HOS is discussed and presented below. Boating would continue at other Backbone and non-Backbone access and destination sites around the Bay, but those sites

would not be designated as WT sites, nor would the WT assist with any improvements, education, or outreach programs associated with those sites. Improvements at those sites may still occur at the discretion of the site owners/managers.

A preliminary list of 57 HOS is included in the WT Plan and presented in Table 2-1. This list was initially considered for the HOS-Only Alternative. However, the analysis in this Draft EIR indicated that ten of the HOS sites originally listed in the WT Plan could have major management issues. Therefore, those sites are not included in this Revised HOS Only Alternative. Excluded sites and the reasons for their exclusion from the revised HOS list are summarized in Table 4-1, below.

Table 4-2, below, presents the revised list of HOS sites; Figure 4-1, following, shows their locations around the Bay. As with the Proposed Project, it should be noted that further study of Backbone Sites during the Trailhead Plan preparation or CEQA review processes may result in other sites being added or removed from the HOS list.

TABLE 4-1: SITES EXCLUDED FROM WT PLAN LIST OF HIGH OPPORTUNITY SITES[1]

ID	Site Name	Location	Reason for Exclusion
SM16	Seal Point Park	San Mateo	Potentially significant rafting birds impacts
SM21	Oyster Point Marina	So. San Francisco	Potential significant ardeiid/shorebird/marshbird nesting impacts
SF10	Aquatic Park	San Francisco	Potentially significant rafting birds impacts
SF12	Crissy Field	San Francisco	Potential significant rafting waterbirds/ardeiid and shorebird roosting and foraging impacts
SN5	Pappas Taverna/ Lakeville Marina	Petaluma	Potential significant ardeiid/shorebird/marshbird nesting impacts
A8	Middle Harbor Park	Oakland	Potentially significant rafting birds impacts
CC6	Pinole Bay Front Park	Pinole	Potentially significant rafting birds impacts
CC9	Keller Beach	Richmond (Pt.)	Potential harbor seal haul-out site impacts
CC10	Ferry Point	Richmond (Pt.)	Potential harbor seal haul-out site impacts
CC19	Pt. Isabel Regional Shoreline	Richmond	Potentially significant rafting birds impacts

[1] Exclusions based on potential for WT users to have a medium/high likelihood of adversely affecting highly sensitive biological resources near the site, which would constitute a substantial management concern.

TABLE 4-2: REVISED LIST OF HIGH OPPORTUNITY SITES

ID	Site Name	City	Category	Launch Type	Existing/ Planned
Alameda County					
A2	Berkeley Marina, Ramp	Berkeley	marina/harbor	Ramp	Exist. Launch
A6	Emeryville City Marina	Emeryville	marina/harbor	Ramp	Exist. Launch
A9	Jack London Square/CCK	Oakland	public boat launch r/f	Float	Exist. Launch
A11	Estuary Park/J L Aquat.Center	Oakland	waterfront park	ramp,float (A)	Exist. Launch
A12	Grand Avenue Boat Ramp	Alameda	public boat launch r/f	ramp,float	Exist. Launch
A14	Robert Crown Memorial State Beach	Alameda	waterfront park	sand beach	Exist. Launch
A15	Encinal Launching and Fishing Facility	Alameda	public boat launch r/f	ramp,float	Exist. Launch
A20	San Leandro Marina	San Leandro	marina/harbor	ramp,float	Exist. Launch
A26	Berkeley Marina, Small Boat Launch	Berkeley	public boat launch r/f	Dock	Exist. Launch
Santa Clara County					
SC3	Palo Alto Baylands Launching Dock	Palo Alto	waterfront park	ramp,float	Exist. Launch
San Mateo County					
SM4	Redwood City Municipal Marina	Redwood City	marina/harbor	Ramp	Exist. Launch
SM13	East 3rd Ave	Foster City	waterfront park	sand beach	Exist. Launch
SM17	Coyote Point, Marina	San Mateo	marina/harbor	Ramp	Exist. Launch
SM22	Brisbane Marina	Brisbane	marina/harbor	Riprap	Exist. Launch
SM23	Coyote Point, Beach	San Mateo	waterfront park	sand beach	Exist. Launch
San Francisco County					

TABLE 4-2: REVISED LIST OF HIGH OPPORTUNITY SITES

SF1	Candlestick Point State Recreation Area	San Francisco County	waterfront park	sand beach	Exist. Launch
SF2	India Basin Shoreline Park	San Francisco	waterfront park	pebble beach	Exist. Launch
SF7	Pier 52 Boat Launch	San Francisco	public boat launch r/f	Ramp	Exist. Launch
Marin County					
M1	Kirby Cove	Sausalito	waterfront park	pebble beach	Exist. Dest.
M2	Horseshoe Cove	Sausalito	waterfront park	sand beach	Exist. Launch
M5	Dunphy Park	Sausalito	waterfront park	pebble beach (A)	Exist. Launch
M6	Schoonmaker Point	Sausalito	waterfront park	sand beach (A)	Exist. Launch
M10	Shelter Point Business Park	Mill Valley	public boat launch r/f	Float	Exist. Launch
M11	Bayfront Park	Mill Valley	waterfront park	dirt beach,float (A)	Exist. Launch
M17	Angel Island State Park	Marin County	waterfront park	sand beach	Exist. Dest.
M35	Loch Lomond Marina: Ramp	San Rafael	marina/harbor	ramp (A)	Exist. Launch
M36	Loch Lomond Marina: Beach	San Rafael	marina/harbor	dirt beach	Exist. Launch
M38	McNear's Beach	San Rafael	waterfront park	sand beach	Exist. Launch
M39	China Camp State Park	San Rafael	waterfront park	sand beach (A)	Exist. Launch
M40	Bull Head Flat	San Rafael	waterfront park	pebble beach (A)	Exist. Launch
M47	Black Point Boat Launch	Novato	public boat launch r/f	ramp,float (A)	Exist. Launch
Napa County					
N1	Cutting's Wharf	Napa County	public boat launch r/f	ramp,float (A)	Exist. Launch
N2	JFK Memorial Park	Napa	waterfront park	ramp,float (A)	Exist. Launch
N6	Napa Valley Marina	Napa	marina/harbor	Ramp	Exist. Launch

TABLE 4-2: REVISED LIST OF HIGH OPPORTUNITY SITES

Sonoma County					
Sn6	Petaluma Marina	Petaluma	marina/harbor	ramp (A)	Exist. Launch
Solano County					
So1	Brinkman's Marina	Vallejo	public boat launch r/f	ramp,float	Exist. Launch
So5	Belden's Landing	Fairfield	public boat launch r/f	ramp,float	Exist. Launch
So7	Matthew Turner Park	Benicia	waterfront park	pebble beach	Exist. Launch
So8	West 9th Street Launching Facility	Benicia	waterfront park	ramp,float	Exist. Launch
So9	Benicia Point Pier	Benicia	waterfront park	pebble beach	Exist. Launch
So10	Benicia Marina	Benicia	marina/harbor	ramp (A)	Exist. Launch
So12	Suisun City Marina	Suisun City	marina/harbor	ramp,float	Exist. Launch
Contra Costa County					
CC1	Martinez Marina	Martinez	marina/harbor	ramp,float (A)	Exist. Launch
CC2	Carquinez Strait Reg. Shoreline (Eckley Pier)	Martinez	waterfront park	pebble beach	Exist. Launch
CC14	Richmond Municipal Marina	Richmond	marina/harbor	ramp,float	Exist. Launch
CC16	Shimada Friendship Park	Richmond	waterfront park	Steps	Exist. Launch
CC17	Barbara & Jay Vincent Park	Richmond	waterfront park	sand beach (A)	Exist. Launch

(A) = ADA-accessible

Bay Water Trail GIS data provided by BCDC

Figure 4-1: Revised HOS Sites

GECo Environmental Consulting

WETLANDS AND WATER RESOURCES, INC.

Map file: WaterTrail_HOS_1134_2008-0604dg.mxd

EVALUATION OF IMPACTS

RECREATION

This alternative would reduce the recreational benefits of the project because it would limit the total number of sites to be supported by the Water Trail to 47 instead of potentially 112 or more. It could result in increased use of some HOS, based on the fact that outreach materials would focus only on these sites. It should be noted that NMSB use at all existing non-HOS sites would continue.

PUBLIC SERVICES AND NAVIGATIONAL SAFETY

No major new facilities would be developed at the HOS sites and boating would be minimally redirected compared with existing conditions. Some HOS sites are near ferry terminals, and navigational hazards would continue to exist near those sites. No new campgrounds would be developed as part of the WT, and the need for public services associated with those camping facilities would be eliminated. Existing boating hazards would remain. It should be noted that NMSB use at all existing non-HOS sites would continue; this alternative would eliminate the project's education component at those sites, which could result in greater hazards than with the project.

AESTHETICS

The HOS require, by definition, virtually no development beyond signage. The non-HOS (that is, all other Backbone Sites) may or may not be enhanced or developed in the future, but there is the potential for development that could create visual impact at those other sites, particularly in more rural areas. This alternative would therefore reduce the potential project impact on visual resources. However, visual impacts of non-WT development at other access sites may continue to occur at the discretion of site owners and managers.

BIOLOGICAL RESOURCES

Rafting Waterbirds, Nesting Waterbirds (Including Threatened and Endangered Species), and Tidal Marsh Birds

As with the Proposed Project, NMSB use under this alternative could result in a disturbance response (head alert, diving, swimming away, or flying) when boats approach within 100-250 meters of rafting waterbirds. Such disturbance would contribute to cumulative energetic costs that may range from insignificant to lethal, depending on frequency of disturbance and fitness of individual waterbirds. All rafting waterbirds would be most vulnerable to disturbance during migratory periods (October and March).

Some nesting sites of the California Least Tern and Western Snowy Plover are located along the shoreline of the Bay. Inadvertent disturbance to these sites, though rare, would be possible from potentially increased boating at any HOS site within typical maximum daily boating distance (within 4 miles of access point) of the nesting site, which could result in disruption of the nesting cycle and, ultimately, "take" of a listed species. As with the Proposed Project, nesting colonies of gulls, terns, cormorants, egrets and herons could potentially be disrupted by watercraft intruding too close to nest sites, causing increased energy costs and exposure of eggs and nestlings to predation.

Intrusion of watercraft and boaters into smaller tidal sloughs and emergent tidal marsh habitats from potentially increased boating at any HOS site within typical maximum daily boating distance (within four miles of the site; i.e., four miles in one direction) could disturb nesting birds, especially the endangered California Clapper Rail, during the extended nesting season (January-August). Repeated disturbances could compromise reproductive success and expose nests to predation, thus resulting in indirect "take" of an endangered species.

Because the HOS-only alternative would eliminate construction impacts, support only half as many launch sites, and eliminate from the Plan sites near areas of medium to high resource value where possible increased boating activity could result in potential impacts to those resources above current baseline levels, levels of disturbance would be lower in this alternative than in the Proposed Project. It should be noted that, under this alternative, NMSB use would continue at existing non-HOS sites, and the project's education and management programs would not be extended to those sites. Therefore, existing biological impacts from those sites would continue. Biological mitigations applicable to the Proposed Project would be similarly applicable to these impacts associated with use of the HOS and overall impacts to these bird species would be similar to those of the Proposed Project.

Tidal-flat Specialists (shorebirds)

As with the Proposed Project, this alternative would result in no significant disturbance to shorebirds because shorebirds forage on exposed tidal flats, which is habitat unavailable to watercraft. Likewise, when the tidal flats are inundated and accessible to watercraft, shorebirds gather to roost at supratidal habitats – seasonal wetlands, emergent tidal marshes, levees, jetties, piers, docks, etc. Therefore there would be no substantive difference in impacts between this alternative and the Proposed Project.

Seals

Given the minimal nature of construction/ improvements that would be needed at HOS sites, potential disturbance to seals at any nearby haul-outs or in the water due to onsite construction would be minimal or non-existent.

However, increased use of any of these sites by Water Trail users could still result in the disturbance to harbor seals at haul-outs by boaters, and contribute to avoidance or abandonment of traditional haul-out sites due to project and cumulative increased use of the Bay by non-motorized watercraft. Given the reduced number of Water Trail sites used to access bay waters under Alternative 1, and the elimination of sites with high potential to affect seal haul-out sites from this alternative, these impacts would be less than under the Proposed Project. Mitigation measures identified for the Proposed Project would apply to this impact. It should be noted that, under this alternative, NMSB use would continue at existing non-HOS sites, and the project's education and management programs would not be extended to those sites. Therefore, existing impacts to harbor seals from those sites would continue.

CULTURAL RESOURCES

The HOS would result in virtually no project-related development beyond the addition of signage, in contrast to the remaining, non-HOS (all of the other Backbone Sites). Because development has the potential to destroy buried cultural resources, this alternative would

reduce the potential project impact on cultural resources. It should be noted that, under this alternative, NMSB use would continue at existing non-HOS sites, and site owners/managers may still develop new facilities that could adversely affect cultural resources.

HAZARDOUS MATERIALS

It is not known at this time if any of the sites have issues with contaminated soil and groundwater from past uses of chemicals at the site or uses at adjacent sites. There is no reason to assume that HOS have fewer or greater issues in this respect. However, if only HOS are part of the project, there would be virtually no project-related development or excavation at any of the sites. This alternative would therefore reduce the Hazardous Materials impacts of the project. It should be noted that, under this alternative, owners/managers may still develop new facilities that could result in hazardous materials impacts.

HYDROLOGY AND WATER QUALITY

Under this Alternative the impacts to hydrology and water quality would be less than under the Proposed Project. The HOS require the least amount of modification to meet the goals of the Water Trail and in most cases would only require the addition of signage. Therefore, construction activities near the Bay shore and the creation of impervious surfaces (which lead to increased runoff and hence pollution) would be non-existent or minimal. It should be noted that, under this alternative, owners/managers may still develop new facilities that could result in water quality impacts.

LAND USE PLANNING

Given the minimal improvements expected at HOS sites as a result of WT Plan implementation, few, if any, conflicts with local land use plans or nearby land uses are likely. Most local land use plans for bayside jurisdictions and land management agencies support access to the Bay. In addition, at the regional level, the Bay Conservation and Development Commission (BCDC) Bay Plan has a specific policy that states it aims to increase public access onto and on the Bay to the maximum extent possible. Restriction of the WT to only the HOS could conflict with this policy.

TRANSPORTATION, CIRCULATION AND PARKING

The HOS have existing parking facilities. Limiting the project to minimal signage improvements and education may still allow for increased parking demand, but this demand is unlikely to result in significant impacts to existing parking facilities at HOS sites. HOS sites that have marginal or inadequate parking facilities, or have existing roadway or traffic hazards/constraints (e.g., railway crossing issues), would continue to have those impacts under this alternative.

ALTERNATIVE 2: NO PROJECT

Under this alternative, the WT would not be implemented. No new infrastructure, signage, educational, outreach, or other WT strategies would be implemented. It is assumed that NMSB use would continue to increase Bay-wide as the regional population continues to grow.

RECREATION

Under this alternative, use of NMSBs would rise along with regional population. Demand shifts to and from certain facilities that may occur from implementation of the Proposed Project would not occur under this alternative. Recreational facility improvements for these users may or may not occur. The Proposed Project's recreational benefits and potential impacts would not occur. New campgrounds and launch facilities would not be developed in association with the WT. It should be noted that, under this alternative, owners/managers may still develop new facilities that could provide recreational resources.

PUBLIC SERVICES AND NAVIGATIONAL SAFETY

Under this alternative, existing navigational hazards would continue. Project education regarding navigational hazards would not be implemented. Navigational hazards that might have been associated with new or expanded project-supported sites would not occur. It should be noted that, under this alternative, owners/managers may still develop new facilities that could result in public service and navigational hazards impacts.

AESTHETICS

Under this alternative, no new access facilities would be supported by the WT Project. However, new facilities would continue to be developed at various sites around the Bay in response to boater demand. New facilities would be subject to local, state, and federal agency design review, as applicable, but not to WT Trailhead Plan review. It is therefore possible that this alternative could have a greater impact on visual quality than the Proposed Project.

BIOLOGICAL RESOURCES

Rafting Waterbirds

The No Project Alternative would not result in any WT-related access improvements or publicity and, therefore, would not result in impacts to rafting waterbirds that could occur from redirecting NMSB use on the Bay. It is not expected to result in greater levels of disturbance to rafting waterbirds than the Proposed Project because it would not foster increased use of the estuary by non-motorized watercraft. However, the No Project Alternative would not provide the educational component and the avoidance strategies included in the Proposed Project, and thus as the population around the Bay increases and greater numbers of people recreate in NMSBs, there may be greater impacts, in relative terms, than under the Proposed Project.

Nesting Waterbirds (including threatened and endangered species)

The No Project Alternative would not result in any WT-related access improvements or publicity and, therefore, would not redirect NMSB use on the Bay. In addition, this alternative would eliminate the Proposed Project's educational component and avoidance strategies aimed at protecting nesting waterbirds. Therefore, this alternative would provide less protection to nesting waterbirds than would the Proposed Project.

Tidal-marsh Birds

The No Project Alternative would not result in any WT-related access improvements or publicity and, therefore, would not result in impacts to birds from redirecting NMSB use on the Bay. In addition, this alternative would eliminate the Proposed Project's educational component and its avoidance strategies. Therefore, this alternative would afford less protection to tidal marsh birds than the Proposed Project.

Tidal-flat Specialists (Shorebirds)

As with the Proposed Project and Revised HOS-Only Alternative, the No Project Alternative would have no impact on tidal-flat specialists.

Seals

Under the No Project Alternative, use of Bay waters by NMSB would presumably increase Bay-wide as the regional population continues to grow. There would be no project-related short-term disturbances due to WT improvements or construction at proposed WT sites. However, owners/managers may still implement site improvements outside of the WT process. Current seasonal closures to sensitive areas (i.e., Mowry Slough) would remain in place and the US Fish and Wildlife Service may implement additional seasonal closures with or without the Proposed Project. Some increased disturbance to harbor seal haul-out sites could still occur from the overall increase in use by NMSB, but any buoys and signage identifying safe viewing distances and any additional educational materials proposed by the WT Plan to protect seals, would not be implemented. Therefore impacts would potentially be less than under the Proposed Project with respect to the potential for impacts associated with development of new sites within boating distance of harbor seal haul-outs. Impacts would be potentially greater with respect to existing and future access sites around the Bay not receiving the benefits of the education and outreach to be provided by the Proposed Project.

CULTURAL RESOURCES

The No Project Alternative avoids the potential for the WT to influence development of new access sites or major enhancement of existing sites in the future, but does nothing to change existing or future plans for site development or enhancement. Existing plans for the development of new access sites, new facilities, or facility enhancements for NMSB may be developed independent of the Water Trail planning process. Therefore, cultural resources impacts of the No Project Alternative would be similar to those of the Proposed Project.

HAZARDOUS MATERIALS

The No Project Alternative would avoid the potential for the WT to influence development of new access sites or major enhancement of existing sites, and therefore eliminate the potential for project-related activity that could expose hazardous materials. The No Project Alternative would not remove the possibility that hazardous materials could be exposed or introduced as part of the development of planned, new access sites or major facility expansion.

HYDROLOGY AND WATER QUALITY

The No Project Alternative would avoid the potential for the WT to influence development of new access sites or major enhancement of existing sites, and therefore negates the potential for project-related activity that could alter the hydrology or water quality of particular sites. The No Project Alternative does not remove the possibility that the development of new sites or enhancement or addition of new facilities at existing sites could be implemented in a way that would negatively impact hydrology or water quality. Therefore, it is possible that hydrologic and water quality impacts may still occur under the No Project Alternative.

LAND USE PLANNING

The No Project Alternative would have little if any affect on land use planning. The San Francisco Bay Plan has already outlined policies for access to the Bay that will continue to affect land use planning, with or without the Water Trail. In addition, local, state, and federal agencies' plans for lands under their jurisdiction would continue to guide development of new or improved Bay access. It is likely that there would be no difference in land use planning impacts with implementation of the No Project Alternative. The beneficial land use planning effects of implementation of the WT Plan and Trailhead Plans, and CEQA review of those plans, would not occur under this alternative.

TRANSPORTATION, CIRCULATION AND PARKING

Under this Alternative, no WT-related site improvements, including traffic-inducing and traffic accommodating improvements, would occur. Local and regional transportation demand increases and traffic facility improvements would continue to occur with or without the project. Site-specific facility improvements would still be required to undergo local CEQA (and/or NEPA, if applicable) review for traffic impacts and mitigations. Development of Trailhead Plans that would presumably consider traffic and parking needs, and CEQA review of those plans, would be eliminated under this alternative. Overall impacts would be similar to those of the Proposed Project.

4.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines (Section 15126.6(a) and (e)(2)) require that an EIR's analysis of alternatives identify the "environmentally superior alternative" among all of those considered. In addition, if the No Project Alternative is identified as environmentally superior, then the EIR also must identify the environmentally superior alternative among the other alternatives. Finally, under CEQA, the goal of identifying the environmentally superior alternative is to assist decision makers in considering project approval. CEQA does not, however, require an agency to select the environmentally superior alternative, nor to consider the feasibility of environmentally superior project alternatives identified in the EIR if described mitigation measures will reduce environmental impacts of the approved project to acceptable (less than significant) levels. (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California*, 47 Cal.3d 376, 400-3 (1988*); Laurel Hills Homeowners Association v. City Council* 83 Cal.

App. 3d 515 (1978), CEQA Guidelines Sections 15042–15043). Given that the Proposed Project, as mitigated, avoids or reduces to less than significant levels all potential impacts, the lead agency may elect to adopt the Proposed Project, incorporating all mitigation measures.

Based on the above analysis, the Revised HOS Alternative would be the environmentally superior alternative. That alternative would provide the same educational and recreation benefits of the project for those Revised HOS sites, but would not allow for trailhead designation at the other Backbone Sites, and at the ten most ecologically sensitive HOS sites. To the extent that new construction and increased use of the other Backbone Sites and the ten most ecologically sensitive HOS sites could be encouraged through trailhead designation, this alternative might reduce overall impacts. Through education at the Revised HOS sites, impacts of boaters on sensitive resources may be reduced to lower levels than currently occurs, resulting in a net benefit to those resources. However, this alternative would not provide the educational and stewardship benefits of the proposed project at non-HOS sites. Use of those sites by NMSB would continue, along with associated impacts to wildlife and other resources addressed in this EIR. Therefore, while this alternative would appear to reduce impacts compared with the Proposed Project because of the elimination of ten of the HOS and all other Backbone Sites from the project, that reduction of impacts may not actually occur on the ground. Implementation of all other mitigation strategies identified in this EIR would also apply to this alternative, resulting in less than significant impacts to all issues at the Revised HOS sites.

5. CUMULATIVE IMPACTS AND OTHER CEQA SECTIONS

5.0 CUMULATIVE IMPACTS AND OTHER CEQA SECTIONS

5.1 GROWTH INDUCING IMPACTS

CEQA requirements for evaluation of growth-inducing impacts are set forth in Section 15126.2 (d) of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387). CEQA requires that both direct and indirect impacts of all phases of a proposed project be considered. Growth-inducement is typically considered to be a direct or indirect effect of an action that either directly fosters growth or removes an obstacle to economic or population growth, or the construction of new housing. The CEQA Guidelines also require evaluation of new infrastructure and service facilities needed to serve growth induced by a project. The Guidelines note that "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." Therefore, the nature of the effects of any induced growth also must be considered to determine if the impacts of that growth are potentially significant.

Some projects may be considered growth inducing while others may be growth accommodating (i.e. they are intended to accommodate planned growth, but do not induce that growth). The distinction here is primarily whether or not a project removes an obstacle to growth. It is sometimes argued that, if growth is already planned for in a jurisdiction's General Plan, then infrastructure supporting that development is growth accommodating rather than growth inducing. However, CEQA is concerned with on-the-ground impacts to the environment. Therefore, if planned development cannot move forward absent a particular infrastructure project, or the development is substantially encouraged by that infrastructure, that project is generally considered growth inducing.

The CEQA Guidelines also state (Section 16064 (d)(3) that an indirect physical change is to be considered only if that change is "a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable."

The WT Plan includes potential trailhead site designation and education/outreach components. Some additional facility development may occur as the WT Plan is implemented. This development would likely be of small scale and would serve local and regional recreational boaters. It is unlikely that this development would be of a scale to induce substantial additional economic or physical development beyond the immediate access point. As discussed in the Recreation section of this EIR, the project is not expected to substantively increase the use of small, non-motorized boats in the San Francisco Bay estuary. This boating use is projected to increase at the same rate as population growth, with or without the project. The WT Plan site designations and subsequent education and site improvements could result in shifting of boating use to and from certain sites. As noted above, this sort of shift in recreation use is unlikely to induce growth beyond the local access point. Therefore this impact would be **less than significant**.

5.2 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

This EIR identified a number of potentially significant impacts in each of the analyzed topics. All of those impacts were found to be mitigable to a less than significant level by application of mitigation measures identified in this document; none of the impacts were found to be significant and unavoidable.

5.3 IRREVERSIBLE/IRRETRIEVABLE ENVIRONMENTAL EFFECTS

The WT Plan would result in the irretrievable use of natural resources including fossil fuels and building materials associated with construction of facility improvements and boaters getting to and from the WT access sites. However, it is possible that use of fuel by boaters could be reduced if they chose to use WT Plan access sites nearer to their homes than at present. In addition, new boating facilities such as on-site boat storage could facilitate boater use of public transit, bikes or smaller vehicles, to go to sites instead of larger vehicles required to transport the boats, which also could reduce the use of fossil fuels.

No other irreversible/irretrievable uses of natural resources were identified as resulting from implementation of the Plan.

5.4 CUMULATIVE IMPACTS

This section of the EIR identifies the cumulative impacts associated with the proposed WT project as statutorily required by CEQA. Cumulative impacts expected from the proposed project are the result of combining the potential effects of the project with other known regional projects, which are described below. The following discussion considers the impacts of the relevant environmental areas. The information is taken from the various analyses within Section 3.0 of this EIR.

CUMULATIVE PROJECTS CONSIDERED IN THIS EIR

The Association of Bay Area Governments (ABAG) estimates that the population of the nine-county region will increase by 1.4 million people (20.5%) in the next 25 years, from approximately 6.8 million in the year 2000 to 8.2 million in the year 2025. This population growth rate is not as dramatic as in the late 1990s and early 2000s (ABAG 2001). With development come numerous individual projects that affect the Bay margins and this Program EIR cannot take them all into account. Instead, discussed below are projects known to be Bay-wide in their influence on the Bay margins.

Cumulative projects considered in this EIR include:

- Association of Bay Area Governments (ABAG) – Bay Trail Plan
- San Francisco Estuary Invasive Spartina Project (ISP): Spartina Control Program
- San Francisco Bay Water Emergency Transportation Authority (WETA) – Ferry Plan
- South Bay Salt Ponds Restoration Project

ASSOCIATION OF BAY AREA GOVERNMENTS (ABAG) – BAY TRAIL PLAN

The San Francisco Bay Trail is a planned bicycle and pedestrian trail system around the perimeter of San Francisco and San Pablo Bays, approximately 500 miles in length. Currently, 290 miles are in place and in use by the public. The Association of Bay Area Governments coordinates the completion of this regional trail through 47 cities and nine counties. Table 5-1 shows WT Backbone Sites that are adjacent to existing segments of Bay Trail spine. There is potential overlap between the projects both in the possibilities to share facilities such as restrooms and parking and in increasing the overall number of visitors to these locations.

TABLE 5-1: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL

ID	SiteName	existing/planned*	launch/destination*
Alameda County			
A1	Albany Beach	existing	launch
A2	"Berkeley Marina, Ramp"	existing	launch
A4	Point Emery	existing	launch
A5	Shorebird Park	existing	launch
A6	Emeryville City Marina	existing	launch
A8	Middle Harbor Park	existing	launch
A9	Jack London Square/CCK	existing	launch
A11	Estuary Park/Jack London Aquatic Center	existing	launch
A12	Grand Avenue Boat Ramp	existing	launch
A14	Robert Crown Memorial State Beach	existing	launch
A15	Encinal Launching and Fishing	existing	launch
A18	Doolittle Drive; Airport Channel	existing	launch
A20	San Leandro Marina	existing	launch
A24	Jarvis Landing	existing	launch
A25	Tidewater Boathouse	planned	launch
A26	"Berkeley Marina, Small Boat Launch"	existing	existing
A27	Coyote Hills	planned	destination
A28	Elmhurst Creek	existing	existing
A30	Hayward's Landing	planned	destination
Santa Clara County			
SC2	Alviso Marina	planned	launch
SC3	Palo Alto Baylands Launching Dock	existing	launch
San Mateo County			
SM2	Ravenswood Open Space Preserve	existing	launch
SM4	Redwood City Municipal Marina	existing	launch
SM11	Beaches on the Bay	existing	launch
SM 13	East 3rd Ave	existing	launch

TABLE 5-1: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL

ID	SiteName	existing/planned*	launch/destination*
SM16	Seal Point Park	existing	launch
SM17	"Coyote Point, Marina"	existing	launch
SM18	Old Bayshore Highway	existing	launch
SM20	Colma Creek/Genentech	existing	launch
SM21	Oyster Point Marina	existing	launch
SM22	Brisbane Marina	existing	launch
SM24	Westpoint Marina	planned	launch
Contra Costa County			
CC1	Martinez Marina	existing	launch
CC2	Carquinez Strait Reg. Shoreline (Eckley Pier)	existing	launch
CC6	Pinole Bay Front Park	existing	launch
CC9	Keller Beach	existing	destination
CC10	Ferry Point	existing	launch
CC11	Boat Ramp Street Launch Area	existing	launch
CC14	Richmond Municipal Marina	existing	launch
CC15	Marina Bay Park & Rosie the Riveter Memorial	existing	launch
CC16	Shimada Friendship Park	existing	launch
CC17	Barbara & Jay Vincent Park	existing	launch
CC19	Point Isabel Regional Shoreline	existing	launch
CC21	Point Pinole	planned	destination
San Francisco County			
SF1	Candlestick Point State Recreation Area	existing	launch
SF2	India Basin Shoreline Park	existing	launch
SF4	Islais Creek	existing	launch
SF6	The “Ramp”	existing	destination
SF7	Pier 52 Boat Launch	existing	launch
SF8	South Beach Harbor (AKA Pier 40)	existing	launch
SF10	Aquatic Park	existing	launch
SF11	Gas House Cove (aka Marina Green)	existing	launch
SF12	Crissy Field	existing	launch
SF13	Brannan St Wharf	planned	launch
SF14	Northeast Wharf Park	planned	launch
Marin County			
M10	Shelter Point Business Park	existing	launch
M11	Bayfront Park	existing	launch
M16	Richardson Bay Park/ Blackies Pasture	existing	launch

TABLE 5-1: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL

ID	SiteName	existing/planned*	launch/destination*
M29	Ramillard Park	existing	launch
M31	Jean & John Starkweather Shoreline Park	existing	launch
M39	China Camp State Park	existing	launch
M40	Bull Head Flat	existing	launch
M43	John McInnis Pk.	existing	launch
Napa County			
N1	Cutting's Wharf	existing	launch
N2	JFK Memorial Park	existing	launch
Solano County			
So1	Brinkman's Marina	existing	launch
So2	California Maritime Academy	existing	launch
So7	Matthew Turner Park	existing	launch
So8	West 9th Street Launching Facility	existing	launch
So9	Benicia Point Pier	existing	launch
So10	Benicia Marina	existing	launch

SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT (ISP): SPARTINA CONTROL PROGRAM

The Spartina Control Program is the "action arm" of the San Francisco Estuary Invasive *Spartina* Project (ISP) and was initiated by the California State Coastal Conservancy (SCC) in 2000. It aims to control non-native species of cordgrass (*Spartina),* that are changing the ecology of large expanses of tidal mudflats and salt marshes, affecting habitat for several native species, including the California clapper rail. The geographic focus of the ISP includes the nearly 40,000 acres of tidal marsh and 29,000 acres of tidal flats that comprise the shoreline areas of the nine Bay Area counties. Control of invasive *Spartina* species by methods including herbicide spraying is ongoing at several locations (Coastal Conservancy and USFWS 2003).

SAN FRANCISCO BAY WATER EMERGENCY TRANSPORTATION AUTHORITY (WETA) – "FERRY PLAN"

The Water Emergency Transportation Authority (formerly Water Transportation Authority) has adopted an Implementation and Operations Plan (WTA 2002) which has been analyzed in an EIR (URS Corporation, 2003). WETA aims to increase regional mobility and transportation options by providing new and expanded water transit services and ground transportation terminal access in the San Francisco Bay Area. There is potential for overlap with the WT in the siting of some of the new ferry terminals and potential expansion at others. Figure 3.2-2 shows the location of ferry routes.

SOUTH BAY SALT PONDS RESTORATION PROJECT

The State of California and the federal government are currently working on the restoration of 15,100 acres of former salt ponds in the south bay. The restoration work will be integrated with flood management, while also providing for public access, wildlife-oriented recreation, and education opportunities. An EIR/EIS for the South Bay Salt Pond Restoration was completed in 2008 (http://www.southbayrestoration.org); the lead state agency has certified the EIR and a Record of Decision is expected from the federal government before the end of 2008. Phase I Restoration is planned to begin in 2008 or early 2009. This restoration project (both Phase I and future phases) would create opportunities for potential new WT launch sites.

IMPACTS OF PROJECT AND CUMULATIVE PROJECTS

Each resource topic analyzed in this EIR includes an analysis of the cumulative impacts and identifies mitigation measures. The cumulative impacts identified in this EIR include issues regarding: recreation, public services and navigational safety, aesthetics, biological resources, cultural resources, hazardous materials, hydrology and water quality, land use planning, transportation, circulation and traffic.

For the issues of: aesthetics, cultural resources, hazardous materials, land use planning and transportation, circulation and traffic, the impacts and corresponding mitigation measures are site-specific and represent no overall cumulative impacts. Therefore these issues are not addressed further in this chapter.

Cumulative impacts due to recreation, public services and navigational safety, biological resources, and hydrology/water quality are discussed below.

RECREATION

Implementation of the WT will complement the San Francisco Bay Trail program in providing for a full range of non-motorized recreation opportunities. Where the Bay Trail intersects with WT sites, the two programs, as identified in WT Strategy #2, the opportunity for sharing visitor amenities exists. The outreach and education functions of Bay Trail would be supportive of WT Strategies #17, #18, and #19. Other identified cumulative projects would not significantly adversely affect recreational resources. Therefore, the project's contribution to cumulative impact is generally a positive one and is considered **less than significant**.

PUBLIC SERVICES AND NAVIGATIONAL SAFETY

Implementation of the WT could possibly affect the Bay-wide responsibilities of the Coast Guard. The Coast Guard regulates navigation in San Francisco Bay by issuing and enforcing regulations that govern navigation practices, marine events, and safety and security zones within the Bay and is the primary search and rescue agency in a boating emergency throughout the Bay.

Use levels of WT-designated sites and other travel routes and areas now popularly visited by NMSB users would slowly increase over time in concert with the growing population (see Section 3.1 Recreation, Impact 3.1-1). The cumulative impact of additional services required by the Coast Guard is considered **less than significant**.

The WETA has adopted an Implementation and Operations Plan that provides new and expanded water transit services in the San Francisco Bay Area. The potential for overlap with the WT in the siting of some of the new ferry terminals and potential expansion at others is addressed in Impact 3.2-3 and is considered **significant but mitigated by Mitigation 3.2-3c**.

BIOLOGICAL RESOURCES

WETLAND HABITATS AND DEPENDENT WILDLIFE AND WATERBIRDS

With increased human presence in and around wetland areas, the impacts to the habitats and their dependent wildlife would increase. The Bay Trail attracts visitors to wetland areas, but encourages people to stay on the trail through signage, fencing, and trail design.

Invasive *Spartina* removal would temporarily reduce the amount of tidal marsh and tidal flat habitat available and, on a local scale, would have far more impact upon wildlife presence than would the WT through its increase in human presence in wild areas.

A few WT sites would be affected by the salt pond restoration. These are: A22, Eden Landing Ecological Reserve; A24, Jarvis Landing; A27, Coyote Hills; and SM2, Ravenswood Open Space Preserve. It is conceivable that WT access points might have to be relocated as a consequence. Wildlife habitats would be primarily altered by the salt pond restoration and the WT impact would not be significant in comparison.

The project's contribution to cumulative impacts to these resources would be reduced to a less than cumulatively considerable level through the implementation of mitigation measures identified in this EIR.

SEALS

None of the projects mentioned above would significantly increase impacts to seals.

HYDROLOGY AND WATER QUALITY

The cumulative impacts of the WT project on the hydrology and water quality of the Bay would be limited to impacts related to increased impermeable surfaces in the watershed. The proposed increase in impermeable areas due to the WT and the cumulative regional projects would be miniscule within the scope of development in the Bay Area, and would not substantially increase pollution in the Bay. In addition, new or expanded WT facilities and parking would be highly dispersed around the Bay, and impacts would be further mitigated by measures 3.7-1 and 3.7-2, above. Potential cumulative impacts to hydrologic and water quality conditions in the Bay would be less than significant.

6. REPORT PREPARERS, REFERENCES AND DEFINITIONS

6.0 REPORT PREPARERS, REFERENCES AND GLOSSARY

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6.2 REFERENCES AND PERSONS CONTACTED

3.1 RECREATION

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University of California, San Francisco Outdoor Programs (http://www.outdoors.ucsf.edu/)

What is Access, Paul Kamen (http://www.well.com/user/pk/waterfront/BayAccess/What-is-access-1.htm)

PERSONAL COMMUNICATIONS

John Granatir, Blue Water Kayaking, January 8, 2008.

Cecily Harris, San Mateo County Parks and Recreation Department, January 8, 2008.

Bob Licht, Sea Trek, January 7, 2008.

Mia Manroe, Golden Gate National Recreation Area, January 7, 2008.

Steve Ortega, Golden Gate National Recreation Area, January 7, 2008.

Barbara Rice, National Park Service, Rivers Trails and Conservation Assistance Program, January 7, 2008.

John Sindzinski, San Francisco Bay Area Water Emergency Transportation Authority, January 22, 2008.

Penny Wells, Bay Access, January 9, 2008.

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James Browning, Office of Endangered Species, U.S. Fish and Wildlife Service, May 27, 2008.

Joelle Buffa, San Francisco Bay National Wildlife Refuge Complex, January 7, 2008.

R. Leong, Office of Endangered Species, U.S. Fish and Wildlife. Service, January 17, 2008.

Ivette Loredo, Wildlife Refuge Specialist, U.S. Fish and Wildlife Service, January 9, 2008.

Lynne Stenzel, Wetlands Ecology Division, PRBO Conservation Science, January 9, 2008.

John Y. Takekawa PhD and Isa Woo, USGS Western Ecological Research Center, February 21, 2008.

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PERSONAL COMMUNICATIONS

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Winnie Chan, FWS, January 22.

Roger Jaeckel, California Maritime Academy, January 23.

Brian Shelton, CDFG, Yountville, January 23, 2008.

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CHAPTER 5: CUMULATIVE IMPACTS AND OTHER CEQA SECTIONS

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6.3 GLOSSARY

TECHNICAL TERMS

Access point – A shoreline location where human-powered boats and/or beachable sail craft can be launched and/or landed. Term refers to both launch and destination sites.

Backbone site – An existing or planned access point on the Bay for non-motorized small boats that are intended as launches, or destinations, are open to the public and do not have conditions that would preclude inclusion in the trail

Canoe – Small boat usually crewed by one to three people, open-hulled and propelled by single-bladed paddles. Suitable for protected waters.

Destination site or landing site – A shoreline location where human-powered boats and/or beachable sail craft can land, but from which they cannot or should not be launched. A destination site still needs to have launch facilities – at minimum a launch itself (i.e. a ramp, float, beach, etc.) for landing and then re-launching a small boat. Most of these landing-only sites are not accessible by car or within a reasonable distance for boaters to transport their boats to the launch.

Dinghy – See **Rowboat.**

Dragon Boat – Relatively large, open-hulled small boat up to 45 feet long usually crewed by 22 paddlers. Some designs suitable for open waters. Frequently raced.

Embayment – A small indentation of the shoreline which may have a small beach.

High Opportunity Sites - A subset of access points requiring minimal planning, management changes and improvements on which initial implementation will be focused. In addition launch facilities do not require additional improvements beyond signage. No major management issues (e.g. user conflicts, wildlife disturbances, and health risks from poor water quality) are expected to be caused by trail head designation that would require further site assessment, planning or management changes prior to designation.

Human-powered boats and beachable sail craft – Any type of paddle or rowing vessel (e.g., kayak, dragon boat, rowboat, scull, etc.), or sailboard (windsurfer or kiteboard). The terms are used interchangeably with "NMSBs" to refer to the WT user groups.

Kayak – Relatively long (12-19 feet) and thin small boat crewed by one or two people and maneuvered by a single double-bladed oar. Includes traditional kayaks (sea or touring kayaks) and sit-on-top kayaks (restricted to calm waters and suitable for users with relatively little training).

Kiteboarder/Kitesurfer – Board strapped to feet of single user, propelled by kite attached via harness. Needs 10-25 knot winds.

Landing site – See "Destination site".

Launch site – A shoreline location where human-powered boats and / or beachable sail draft gain access onto the Bay or a waterway connected to the Bay.

NMSBs – Any type of paddle or rowing vessel (e.g. kayak, dragon boat, rowboat, scull, etc.), or sailboard (windsurfer or kiteboard). This phrase is used interchangeably with "human-powered boats and beachable sail craft" to refer to the WT user groups.

Outrigger Canoe – Open-hulled small boat up to 40 long usually crewed by 6 paddlers, well-suited to Bay open waters. Frequently raced.

Paddlesport – Includes use of kayaks, canoes, dragon boats, sculls, whaleboats and rowboats or dinghies. Also includes rafting (not common on San Francisco Bay).

Rowboat – Relatively wide, heavy small boat usually rowed by one person, stable.

Scull – Narrow and long, open-hulled small boat with 2, 4 or 8 rowers with long rowing oars. Requires calm water. Team racing is popular.

Sailboard – See **windsurfer** and **kiteboarder.**

Site designation – Inclusion of a boat launch or destination site in to the water trail. Once a site has been designated, it is considered a trail head and can be promoted as part of the WT. Ownership and responsibility for site management remain with the site manager and / or owner (i.e. these do not transfer to the WT organization). A trail head can be undesignated by the WT Project Management Team. This removes it from the WT, and thus from any education or outreach media (e.g. guidebook, website, etc.). However, undesignating a site does not necessarily affect the availability of access and facilities at the site.

Take – Under section 3(18) of the Endangered Species Act: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" with respect to federally listed endangered species of wildlife.

Trailhead – A boat launch or destination site that has been designated as part of the Water Trail.

Trailhead Plan – A plan prepared by the WT Site Manager that describes existing site features and proposed WT-related improvements, management and maintenance, and education, outreach and stewardship actions for the WT site and how these support the vision and goals of the Bay Area Water Trail. The Trailhead Plan identifies who will be responsible or take the lead for implementing the proposed components and should include a budget describing funding that the site manager is seeking for the trailhead development.

Water Trail Plan - San Francisco Bay Area Water Trail Plan

Water Trail – A network of launch and destination, or landing, sites that allows people in human-powered boats and beachable sail craft to take multiple-day and single-day trips on the Bay.

Whaleboat – Wide, heavy rowboat with a usual crew of 10 (8 rowers). Stable in open waters. Frequently raced.

Windsurfer – Board 6-10 feet long with removable mast and single sail, maneuvered by single user, requires strong (15-30 knot) winds.

AGENCIES AND REGULATIONS

Federal

Americans with Disabilities Act (ADA)

Federal Clean Water Act (CWA)

Federal Endanged Species Act (ESA)

Golden Gate National Recreation Area (GGNRA)

Marine Mammal Protection Act (MMPA)
National Environmental Policy Act (NEPA)
National Historic Preservation Act (NHPA)
National Oceanic and Atmospheric Administration (NOAA)
National Wildlife Refuge (NWR)
U.S. Army Corps of Engineers
U.S. Department of Homeland Security, U.S. Coast Guard (Coast Guard)
U.S. Department of the Interior, National Park Service (NPS)
U.S. Department of the Interior, Fish and Wildlife Service (USFWS)
U.S. Department of Transportation Maritime Administration (MARAD)
U.S. Environmental Protection Agency (U.S. EPA)

State

CALFED Bay-Delta Program
California Department of Water Resources
California Department of Boating and Waterways (Cal Boating)
California Department of Fish and Game (CDFG)
California Department of Parks and Recreation (California State Parks)
California Department of Transportation (Caltrans)
California Department of Water Resources (DWR)
California Environmental Quality Act (CEQA)
California Endangered Species Act (CESA)
California Environmental Protection Agency (CalEPA)
California Native Plant Protection Act (NPPA)
California State Coastal Conservancy (SCC)
California State Water Resources Control Board (SWRCB)
California State University (CSU)
Harbor Safety Committee of the San Francisco Bay Region and Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (OSPRA)
McAteer-Petris Act – established BCDC
Porter-Cologne Water Quality Act
Regional Water Quality Control Board (RWQCB) and the Basin Plan
San Francisco Bay Conservation and Development Commission (BCDC) and BCDC Plan
San Francisco Bay Water Transit Authority – replaced in 2007 by WETA
San Francisco Bay Water Emergency Transportation Authority (WETA)
State Scenic Highway Program

Regional and Local

Association of Bay Area Governments (ABAG) and Bay Trail Plan
Congestion Management Agency (CMA)

East Bay Regional Park District (EBRPD)
Midpeninsula Regional Open Space District (MROSD)
Napa Sonoma Marshes Wildlife Area (NSMWA)
San Francisco Regional Water Quality Control Board (SFRWQCB)

OTHER ACRONYMS AND ABBREVIATIONS

BMP – Best Management Practice
CCP – Comprehensive Conservation Plan
CNPS – California Native Plant Society
ESA – Federal Endangered Species Act
HOS – High Opportunity Sites
NMSB – Non-motorized small boats
PMT – Project Management Team
RNA – Regulated Navigation Area (established by U.S. Coast Guard)
SD – Site Description
SPRR – Southern Pacific Railroad
SWPPP – Storm Water Pollution Prevention Plan
TP – Trailhead Plan
VTS – Vessel Traffic Service
WT – San Francisco Bay Area Water Trail